UNITED STATES

v.

JAMES P. RIGG, JR. ET AL.

IBLA 73-22 Decided August 21, 1974

Appeal from decision (Utah 10421) by Administrative Law Judge Robert W. Mesch, declaring mining claims to be null and void.

Affirmed.

Administrative Procedure: Adjudication -- Administrative Procedure: Administrative Law Judges -- Mining Claims: Determination of Validity -- Rules of Practice: Appeals: Generally

The Board of Land Appeals has the authority to conduct a review de novo of the entire record on an appeal from an Administrative Law Judge's decision.

Administrative Procedure: Burden of Proof -- Mining Claims: Contests -- Mining Claims: Discovery: Generally -- Mining Claims: Discovery: Determination of Validity -- Rules of Practice: Government Contests

Once the government makes a prima facie showing that a mining claim is invalid, the claimant must show with a preponderance of the evidence that the claim is valid.

Evidence: Credibility -- Evidence: Weight -- Mining Claims: Contests -- Mining Claims: Determination of Validity -- Rules of Practice: Evidence -- Rules of Practice: Witnesses

A government mineral examiner is competent to testify at a hearing in a mining contest on his examination and evaluation of mining claims, and his testimony is entitled

to be evaluated the same as that of other expert witnesses.

Administrative Procedure: Burden of Proof -- Evidence: Burden of Proof --Evidence: Weight -- Mining Claims: Contests -- Mining Claims: Determination of Validity -- Rules of Practice: Evidence

A sample taken from an exposure of mineralization and chemical assays of the sample may be given greater weight to prove the existence or nonexistence of a valuable uranium ore deposit than readings of radiometric probe measurements of gamma ray emissions. Radiometric measurements may be used as supporting geological inferences in evaluating a deposit but, alone, they cannot be accepted to prove the existence of a uranium deposit.

Administrative Procedure: Burden of Proof -- Evidence: Burden of Proof -- Mining Claims: Determination of Validity -- Mining Claims: Withdrawn Land -- Withdrawals and Reservations: Effect of

Where a claimant does not have a discovery on a mining claim at the time of a hearing on lands previously withdrawn from location, it is not essential for the government to show a lack of discovery at the date of the withdrawal.

Administrative Procedure: Generally -- Administrative Procedure: Hearings -- Mining Claims: Contests -- Mining Claims: Determination of Validity

The Department of the Interior has jurisdiction to determine if a mining claim has been validated by a discovery by bringing a contest against a claim and affording the claimant an opportunity for a hearing after notice has been given. Claims which do not have

a discovery may be declared void in such an administrative contest without resort to condemnation proceedings.

Mining Claims: Determination of Validity -- Mining Claims: Discovery: Generally

Mining claims for uranium are properly declared invalid where the evidence does not support the existence of sufficient mineralization to prove a discovery of a valuable mineral deposit but, at most, would only warrant further exploration in the hope of making such a discovery.

APPEARANCES: Gregory K. Hoskin, Esq., Nelson, Hoskin, Graves & Prinster, Grand Junction, Colorado, attorney for appellants; Thomas O. Parker, Esq., Regional Solicitor, United States Department of the Interior, Salt Lake City, Utah, for the Bureau of Land Management.

OPINION BY ADMINISTRATIVE JUDGE THOMPSON

James P. Rigg, Jr., and 11 other mining claimants 1/ appeal from a decision by Administrative Law Judge Robert W. Mesch dated June 5, 1972, declaring null and void the mining claims challenged in 13 contests 2/ initiated by the Utah State Director, Bureau of Land Management. The contests were consolidated for hearing. Each contest alleged (1) that "the land embraced within the claims is nonmineral in character," and (2) that "minerals have not been found within the limits of the claims in sufficient quantities to constitute a valid discovery".

1/ Airborne Prospectors, H. W. Balsley, Ester Moore Brown, Mary Ellen Moore, W. Don Quigley, Rigner Operations, James P. Rigg, Sr., James P. Rigg, Jr., Robert H. Ruggeri, Donald H. Wegner, Willard Pease Drilling Company and J. Frank Wright.
2/ U 10615-10622, 10628, 10630, 10666, 10667 and 10421. The names of the claims and the date each claim was recorded are listed in Attachment A of Judge Mesch's decision.

The claims were located between 1951 and 1963 for uranium, vanadium, copper and molybdenum. All of the claims, except one, are situated approximately 40 road-miles from Moab, Utah. One claim, the Rainbow, is located several miles from these claims. There was uranium production from some of the claims prior to 1965, although none since that date. The evidence generally related to uranium and not to other minerals.

The pertinent law and much of the testimony and evidence presented at the hearing have been well summarized in Judge Mesch's decision and will not be repeated here except as necessary to respond to appellants' contentions. A copy of the decision is attached hereto as an Appendix. For each claim, Judge Mesch concluded that the Bureau of Land Management made a prima facie showing of invalidity, and that the contestees did not successfully rebut this showing.

The appellants contend that Judge Mesch's decision is incorrect and that their mining claims are valid. In a statement of reasons for appeal, which refers to and incorporates a posthearing brief filed with Judge Mesch, they attempt to support their contention that the claims are valid by the following major arguments: (1) the evidence presented by each party was not accorded proper weight; (2) significant evidence was ignored by the Administrative Law Judge; (3) the Judge did not consider the question of the measurement of gamma rays as an actual measurement of uranium in place, which question is essential to determining the ore reserves present on the claims; (4) the Judge failed to rule upon objections raised by appellants; (5) no prima facie case of lack of discovery was shown as of September 12, 1964.

In an "Additional Statement of Reasons and Argument," the appellants also allege that as a result of the Department of the Interior's policy of "environmental determinism" and the location of the claims in a national park, the Judge followed the "hard-line" of the Department, and resolved all matters against the claimants. They also allege that:

> If public use dictates that these claims be removed from Canyonlands National Park, since these claims do have a market value, the claims should be taken by right of eminent domain, not judicial fiat.

We do not find any of these considerations persuasive and affirm the Judge's decision.

In support of their first argument that evidence presented by the parties was not given proper weight, appellants challenge the Judge's statement that he "accept[s] the opinions and conclusions expressed by the witnesses for the Bureau [and has] no reason to question their competency or qualifications," by alleging 11 points of impeachment. In support of their second argument, that the Judge ignored significant evidence, they state that the testimony of "practical miners" and locators Rigg and Wegner was ignored by the Judge.

The Board of Land Appeals has the authority to review the entire record on an appeal from an Administrative Law Judge's decision and to make de novo findings. 5 U.S.C. § 557(b) (1970); see 43 CFR 4.1. In considering appellants' contentions we have reviewed de novo all of the evidence in the record, and find that the claims are not supported by a discovery of a valuable mineral deposit.

Appellants' eleven "impeachment points" in support of their first contention, do not compel a different result from that reached by Judge Mesch. We will discuss only a few of these points in detail. For example, appellants assert that while at one point in the hearing Tom H. W. Loomis and Ferdie D. Peterson (two government witnesses whose testimony that there was no discovery on the claims was relied on by Judge Mesch) each said there was no discovery on the claims, they later stated that the claims were a good prospect. This so-called "discrepancy" is not impeaching. Evidence sufficient only to support a finding that a prudent man would undertake further exploration, but not development, is not sufficient to show that a discovery of a valuable mineral deposit has been found. Henault Mining Co. v. Tysk, 419 F.2d 766, 769 (9th Cir. 1969), cert. denied, 398 U.S. 950 (1970). A claim may be a "good prospect," and warrant further exploration, even though no discovery has been shown. Loomis's and Peterson's testimony merely recognizes that some of the claims involved in these contests might be prospects for additional exploration. As Judge Mesch noted, Nathan E. Salo, one of appellants' main witnesses explicitly concurred in this evaluation of those claims (Tr. 1262-63).

A second alleged point of impeachment is that Peterson and Jarvis R. Klem (a third government witness who testified that the claims were invalid) are unaware of how the Atomic Energy Commission computes ore reserves. Their inability to know all of the details in such computations goes to the reliability and weight

to be given to their testimony only on that point. It does not discredit their testimony in other respects. The record does not show that the methods Klem and Peterson used to ascertain a discovery within the claims are incorrect. Therefore, their expertise is no less because of any unfamiliarity with the Atomic Energy Commission's methods for calculating ore reserves.

A third point raised as impeachment concerns the sampling program conducted jointly by two appellants (Donald H. Wegner and W. Don Quigley) and government mineral examiners (Tr. 51-53). The samples were made at points determined by the appellants and cut by the BLM employees. Appellants now claim that because Wegner and Quigley were inexperienced at sampling claims, the values reflected in the samples were lower than they should have been. We note initially, that this argument runs contrary to appellants' second argument that Judge Mesch gave insufficient weight to Wegner's testimony, and tends to confirm the Judge's evaluation of the evidence. We find the Judge gave proper weight to the locators' testimony. Also, the argument that the claims were improperly sampled fails to recognize that the appellants have the ultimate burden of proof on the issue of discovery. The government need only make a prima facie showing that a claim is invalid, and then the locators must show with a preponderance of the evidence that the claim is valid in order to meet their burden, Foster v. Seaton, 271 F.2d 836 (D.C. Cir. 1959); United States v. Bradlaner Enterprises, Inc., 13 IBLA 184, 189 (1973). See also Converse v. Udall, 399 F.2d 616 (9th Cir. 1968), cert. denied, 393 U.S. 1025 (1969). In determining whether a prima facie showing has been made in a contest challenging some uranium claims, this Board stated:

> * * * [t]he question is whether the testimony of the Government's witnesses, if standing by itself, unchallenged and unrefuted, would warrant the conclusion that there had been no discovery of a valuable mineral deposit on any of the claims in question.

United States v. Larsen, 9 IBLA 247, 256 (1973), appeal pending, Larsen v. Morton, Civil No. 73-119-TUC-JAW, D. Ariz. Most of the evidence in this case was presented by the government witnesses. From the nature of their testimony, supported by samples and other data, the conclusion is inescapable that a prima facie case of no discovery was made. Once the government makes a prima facie showing of no discovery, the failure to present sufficient or proper evidence is borne by the claimant. Id. See United States v. Winters, 2 IBLA 329, 335, 78 I.D. 193, 195 (1971). We agree with Judge Mesch that this burden was not met here.

A fourth point of impeachment is that because the government's main witnesses, Klem, Peterson and Loomis, are BLM employees, and because they have testified in many contests regarding mining claims without losing a contest, they are not impartial friends of the court whose testimony should be given greater weight than that of other witnesses. A government mineral examiner is competent to testify at a hearing in a mining contest as to his examination and evaluation of a mining claim, and his testimony is entitled to be evaluated the same as that of similar experts. United States v. Bradlaner Enterprises, Inc., supra; see Udall v. Snyder, 405 F.2d 1179, 1180 (10th Cir.), cert. denied, 396 U.S. 819 (1969). A mineral examiner's testimony, like that of any other witness, should not have any weight if it is unreliable or biased. Id. Appellants have not shown any unreliability. Also, appellants have not shown that the mineral examiners were biased. The mere fact they are employed by this Department is not sufficient to show bias or to discredit their testimony. United States v. Stevens, 14 IBLA 380, 81 I.D. (1974). Judge Mesch did not improperly rely on the testimony of BLM's experts. We similarly reject appellants' other six contentions regarding the unreliability of the Government witnesses' testimony. We have reviewed all these points carefully, but do not feel any of them establishes the validity of the claims. Of most importance here is our finding that the evidence submitted by contestees does not successfully rebut the government witnesses' testimony. Much of it, actually, corroborates their expert opinion that there has not been a discovery.

The next contention is that the Judge did not consider the question of measurement of gamma rays as an actual measurement of uranium in place, and that this is a new question for this Board.

The question of the use of evidence of gamma ray radiation measurement goes to the weight such evidence should be given to prove discovery of a valuable deposit of uranium. This can best be understood first by considering the basic difference between evidence directly establishing an exposure of mineral and that which inferentially does so. As stated in United States v. Larsen, supra, at 261-62:

> * * * geologic inference cannot be accepted as the equivalent of discovery. That is, in order to demonstrate the discovery of a valuable mineral deposit on a lode mining claim, there must be physical exposure within the limits of the claim of a lode or vein bearing mineral of such quality and in such

> quantity as to invite the expenditure of money and effort * * *. If there is not such an exposure, no showing, regardless of the strength of the evidence, of the likelihood of the existence of a valuable ore body will suffice to demonstrate a discovery. See, e.g., United States v. Henault Mining Company, 73 I.D. 184 (1966); aff'd in Henault Mining Company v. Tysk, 419 F.2d 766 (9th Cir. 1969), cert. denied 398 U.S. 950 (1970); United States v. Kenneth O. Watkins and Harold E. L. Barton, A-30659 (October 19, 1967). However, the Department has never required a mining claimant to prove conclusively the quantity or the quality of the ore present on a claim, and it has not held geologic inference to be without value as evidence of a discovery. While geologic inference may not be relied upon to establish the existence of a mineral deposit, it may be accepted as evidence of the extent of a deposit. That is, where ore has been found, the opinions of experts, based upon knowledge of the geology of the area, the successful development of similar deposits on adjacent mining claims, deductions from established facts -- in short, all of the factors which the Department has refused to accept singly or in combination as constituting the equivalent of a discovery -- may properly be considered in determining whether ore of the quality found, or of any mineable quality, exists in sufficient quantity to justify a prudent man in the expenditure of his means with a reasonable anticipation of developing a valuable mine. United States v. Kenneth O. Watkins and Harold E. L. Barton, supra; United States v. Frank Coston, A-30835 (February 23, 1968). [Footnote omitted.]

In exploring for uranium, geiger counters and other devices are used to spot likely "hot" areas. The presence of uranium is confirmed by observation of physically exposed deposits and by chemical assays of samples. As with the discovery of all minerals, there must be an exposure of uranium before the existence of a valuable deposit can be proved. United States v. Larsen, supra. Appellants contend that radiometric analysis and chemical analysis of areas and samples should be accorded equal weight in proving the existence of a discovery.

The evidence in this case establishes that chemical assays and radiometric measurements are not equally reliable. Chemical assays measure the presence or absence of uranium in a sample of an exposure,

whereas radiometric devices measure gamma rays emitting from decaying uranium, its daughter products and some other substances. The accuracy of the measurement of the presence of uranium by radiometric measurements may be distorted by local conditions and variables such as the presence of gamma ray emitting elements other than uranium or problems of disequalibrium between uranium and its daughter products. E.g., Tr. 88, 1206, 1283, 1650-2; Deposition (Contestees' Ex. B) 65. Because of this possibility of distortion in radiometric measurements, greater weight should be given to chemical assays than radiometric probe measurements.

This does not mean that the radiometric measurements have no weight. Indeed, they are very important factors in evaluating a claim. The weight to be given to such measurements will vary depending upon facts supporting their reliability in a given area. It is true, as appellants assert, that the evidence in this case did not establish the existence of other minerals in the area of the claims which emit gamma rays, nor a problem of "disequilibrium" between uranium and its daughter products in the area. If there were such problems, the significance of the measurement of the gamma rays in considering the uranium deposit would be greatly distorted. The lack of a disequilibrium problem and of the existence of other minerals in the area here increases the reliability of such measurements and the weight to be given to them, although the information cannot be accepted as conclusive proof of the existence of uranium, without actual exposure of the deposit. Where some uranium has been exposed, as it was here, on some of the claims, radiometric measurements, as other types of evidence to support geological inferences, may be used for evaluating the scope and extent of the deposit. However, in weighing all of the evidence in this case, we find that there is insufficient evidence to show the mineralization necessary to establish the existence of a valuable mineral deposit on any of the claims.

Appellants' fourth contention is that the Judge failed to rule on objections to certain evidence, and his decision may have been influenced by this evidence. Although Judge Mesch did not rule on appellants' objections to the photographs when initially raised (Tr. 439-40), he did rule on each exhibit at later times in the hearing (Tr. 450, 465, 473, etc.). Accordingly, we reject this contention. In addition, objections to deceptive color and distance portrayed by photographs go to the weight of the evidence and not to their admissibility. It does not appear the photographs were given undue weight by the Judge nor have we given them any weight.

The next contention is that the Judge's decision is incorrect because the government did not make a prima facie showing that the claims were invalid on September 12, 1964.

Congress created Canyonlands National Park on September 12, 1964, 78 Stat. 934, 16 U.S.C. §§ 271 et seq. (1970), and closed the land in the park to mineral location subject to valid existing rights. All of the claims except the northern portion of the Cerebellum, Ceres, Ceria, Certes, Certify, Cesium and Cespit claims are in Canyonlands National Park. An existing location, in an area closed to further appropriation under the mining laws, must be supported by a discovery at the time of the closing. Palmer v. Dredge Corp., 398 F.2d 791, 795 (9th Cir. 1968), cert. denied, 393 U.S. 1066 (1969). However, a mining claim is invalid, if at any time before patent issues, a discovery ceases to exist on the claim. Best v. Humboldt Placer Mining Co., 371 U.S. 334, 336-37 (1963); United States v. Charleston Stone Products, Inc., 9 IBLA 94, 99-100 (1973). Appellants did not have a discovery at the time of the hearing. Consequently, it was not essential for BLM to show a lack of discovery on the date of withdrawal. The objection does not establish that the Judge's decision was in error.

Appellants next contend that the Administrative Law Judge improperly resolved all disputed questions of fact on the basis of the Department's so-called "hard-line policy." This contention, although phrased differently from the other contentions, in effect again raises the contention that the Judge's decision was not supported by a preponderance of the evidence. The standards used by Judge Mesch to evaluate the evidence were those approved by the Supreme Court in Coleman v. United States, 390 U.S. 599 (1968). Appellants have not presented anything that persuades us that Judge Mesch improperly applied this standard. 3/

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3 The allegation that the Judge resolved all conflicts of evidence in favor of the government and that he followed a "hard-line" policy also raises a charge of bias. Other than these unsupported assertions, however, there is nothing to support a charge of bias and we reject this contention. To establish that an Administrative Law Judge is biased there must be a substantial showing of a personal bias. An assumption that he might be predisposed in favor of the government is not sufficient. United States v. Stevens, supra. See United States v. Independent Quick Silver Co., 72 I.D. 367, 370-73 (1965); United States v. Converse, 72 I.D. 141, 143-145 (1965), both aff'd, 262 F.

Appellants' final contention is that since the claims declared invalid in the contest have a market value to them, "[t]hey should be taken by right of eminent domain, not judicial fiat." The bringing of a condemnation proceeding against a mining claim pre-supposes the claim's validity. A mining claim may be marketable to others, but between the United States and a claimant there is no compensable right unless and until a discovery has been made on public land subject to location. Cameron v. United States, 252 U.S. 450, 460 (1919); Union Oil Co. v. Smith, 249 U.S. 337, 356 (1919). If a discovery has been made and the locator has complied with other aspects of the mining laws including marking of the boundaries of the claim and posting notice of the discovery, so long as the discovery is maintained, he acquires an exclusive possessory interest in the claim which may be asserted not only against third parties, but also against the United States. 30 U.S.C. § 26 (1970); Best v. Humboldt Placer Mining Co., supra. This Department has jurisdiction to determine if a claim has been so validated by a discovery by bringing a contest against a claim and affording the claimant an opportunity for hearing after notice has been given. Best v. Humboldt Placer Mining Co., supra; 4/ Cameron v. United States, supra; United States v. O'Leary, 63 I.D. 341 (1956). Here, the Department has chosen to contest the claims. Since the contest disclosed that the claims are invalid, they may be declared void without resort to condemnation proceedings. Any value these claims might have to the owners is not compensable.

To conclude, the evidence in this case establishes that what mineralization has been shown on the claims is of a spotty and erratic nature. At most, it might warrant further exploration in an attempt to discover an ore body, but this does not suffice to establish a discovery of a valuable mineral deposit. Converse v. United States, supra; United States v. Larsen, supra.

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fn. 3 cont.
Supp. 583 (D. Ore. 1966), (only Converse appealed) aff'd Converse v. Udall, 399 F.2d 616 (9th Cir. 1968), cert. denied, 393 U.S. 1025 (1969).

4/ In Best v. Humboldt Placer Mining Co., condemnation proceedings had been instituted against mining claims, but were stayed pending resolution of administrative contests challenging the validity of the claims. The Court recognized that the right to compensation would depend upon whether the claims were valid, and that this Department is the proper forum for initially determining the validity issue.

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, the decision appealed from is affirmed.

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Joan B. Thompson
Administrative Judge

I concur:

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Douglas E. Henriques
Administrative Judge

ADMINISTRATIVE JUDGE STUEBING CONCURRING:

While in general agreement with the analysis of the facts and the law recited in the majority opinion and in the decision of the Administrative Law Judge, I wish to address myself to one aspect of this case in order to clarify my attitude.

With reference to the Bonanza, the Comstock and the Crap Groups of claims, I believe that at any time from 1952 to 1966 it would have been correct to hold that a qualifying discovery had been made on some or all of these claims. The test of discovery first enunciated in Castle v. Womble, 19 L.D. 455 (1894), states:

> * * * where minerals have been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of his labor and means with a reasonable prospect of success, in developing a valuable mine, the requirements of the statute have been met. (p. 457)

The fact that the mineralization found on these claims was sufficient to induce six different operators to actually engage in mining activities, enter into ore contracts, extract, ship, and sell ore during the years from 1952 to 1966 is virtually proof positive that the test of discovery had been met as of that time, absent a showing that none of the six companies and individuals who mined these claims were possessed of ordinary prudence.

However, what those miners were justified in doing at that time on the basis of the knowledge then available is not the measure of what a prudent man would do on the same claims today in the light of the additional information presently available and in view of the experience derived from past efforts. On the basis of what the evidence of record now shows, it is my opinion that a man of ordinary prudence would not further invest his labor and means in the reasonable anticipation that a valuable mine could be developed. Such an undertaking today would be a gambler's risk, dependent to a disporportionate degree upon blind chance, and we have held that the exposure of only such mineralization as is sufficient to inspire a desire to take such a chance does not qualify as the discovery of a valuable mineral deposit. United States v. Gunsight Mining Co., 5 IBLA 62, 69 (1972).

Since the claims in these groups, in my judgment, have been shown to be more mineralized than the others, I must conclude that there is no qualifying discovery on any of the claims.

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Edward W. Stuebing
Administrative Judge

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DECISION

UNITED STATES of AMERICA,	:	UTAH 10421
Contestant	:	
	:	Involving the validity of the
v.	:	lode mining claims designated
	:	on Attachment "A" and situated
DONALD H. WEGNER and	:	within Township 27 South, Range
JAMES P. RIGG, JR.,	:	19 East, Salt Lake Meridian,
Contestees	:	San Juan County, Utah.

UNITED STATES of AMERICA,	:	UTAH 10615
Contestant	:	
v.	:	Involving the validity of the
	:	lode mining claims designated
JAMES P. RIGG, JR.,	:	on Attachment "A" and situated
J. FRANK WRIGHT, D. H. WEGNER,	:	within Township 27 South, Range
J. P. RIGG, WILLARD PEASE	:	19 East, Salt Lake Meridian,
DRILLING COMPANY,	:	San Juan County, Utah.
W. DON QUIGLEY, AIRBORNE	:	
PROSPECTORS, ESTHER MOORE BROWN	:	
and MARY ELLEN MOORE,	:	
	:	
Contestees	:	

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UNITED STATES of AMERICA, Contestant	:	UTAH 10616
v.	:	Involving the validity of the
J. P. RIGG, SR., J. P. RIGG, JR., J. FRANK WRIGHT, D. H. WEGNER, ESTHER MOORE BROWN, MARY ELLEN MOORE, H. W. BALSLEY : and ROBERT H. RUGGERI, Contestees	: : : : : : :	lode mining claims designated on Attachment "A" and situated within Township 27 South, Range 19 East, Salt Lake Meridian, San Juan County, Utah.
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UNITED STATES of AMERICA, Contestant	:	UTAH 10617
v.	: : :	Involving the validity of the lode mining claims designated on Attachment "A"
DONALD H. WEGNER, JAMES P. RIGG, JR., J. P. RIGG, SR., J. FRANK WRIGHT, WILLARD PEASE DRILLING COMPANY, W. DON QUIGLEY, AIRBORNE PROSPECTORS, ESTHER MOORE BROWN, MARY ELLEN MOORE, H. W. BALSLEY and ROBERT H. RUGGERI, Contestees	: : : : : : : : :	and situated within Township 27 South, Range 19 East, Salt Lake Meridian, San Juan County, Utah.
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UNITED STATES of AMERICA, Contestant	:	UTAH 10618
v.	: :	Involving the validity of the lode mining claims designated
DONALD H. WEGNER, JAMES P. RIGG, JR., J. P. RIGG, SR., J. FRANK WRIGHT, WILLARD PEASE DRILLING COMPANY, W. DON QUIGLEY, AIRBORNE PROSPECTORS, ESTHER MOORE BROWN, MARY ELLEN MOORE, H. W. BALSLEY and ROBERT H. RUGGERI, Contestees	: : : : : : : : :	on Attachment "A" and situated within Township 27 South, Range 19 East, Salt Lake Meridian, San Juan County, Utah.
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UNITED STATES of AMERICA, Contestant	:	UTAH 10619
	:	Involving the validity of the
v.	:	lode mining claims designated
JAMES P. RIGG, :		on Attachment "A" and situated
JAMES P. RIGG, JR., D. H. WEGNER,	:	within Township 27 South, Range
AIRBORNE PROSPECTORS, WILLARD	:	19 East, Salt Lake Meridian,
PEASE DRILLING COMPANY and	:	San Juan County, Utah.
W. DON QUIGLEY, Contestees	:	

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UNITED STATES of AMERICA, Contestant	:	UTAH 10620
	:	Involving the validity of the
v.	:	lode mining claims designated
D. H. WEGNER, J. P. RIGG, JR.	:	on Attachment "A" and situated
and J. P. RIGG, SR.,	:	within Township 27 South, Range
Contestees	:	19 East, Salt Lake Meridian,
	:	San Juan County, Utah.

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UNITED STATES of AMERICA, Contestant	:	UTAH 10621
	:	Involving the validity of the
	:	lode mining claims designated
v.	:	on Attachment "A" and situated
	:	within Township 27 South,
RIGNER OPERATIONS,	:	Range 19 East, Salt Lake
Contestee	:	Meridian, San Juan County,
: Utah.		

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UNITED STATES of AMERICA, Contestant	:	UTAH 10622
	:	Involving the validity of the
	:	lode mining claims designated
v.	:	on Attachment "A" and situated
	:	within Township 27 South, Range
JAMES P. RIGG, JR., J. FRANK WRIGHT,	:	19 East, Salt Lake Meridian,
D. H. WEGNER, J. P. RIGG, ESTHER	:	San Juan County, Utah.
MOORE BROWN and MARY ELLEN MOORE, Contestees	:	

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UNITED STATES of AMERICA, Contestant	:	UTAH 10628
	:	Involving the validity of the
v.	:	lode mining claim designated on
	:	Attachment "A" and situated
AIRBORNE PROSPECTORS, JAMES P. RIGG, JR., J. FRANK WRIGHT, D. H. WEGNER, J. P. RIGG, WILLARD PEASE DRILLING COMPANY, W. DON QUIGLEY, ESTHER MOORE BROWN and MARY ELLEN MOORE, Contestees	:	within Township 28 South, Range 18 East, Salt Lake Meridian, San Juan County, Utah.

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UNITED STATES of AMERICA, Contestant	:	UTAH 10630
	:	Involving the validity of the
v.	:	lode mining claim designated on
	:	Attachment "A" and situated
J. P. RIGG, SR., J. P. RIGG, JR., J. FRANK WRIGHT, D. H. WEGNER, ESTHER MOORE BROWN and MARY ELLEN MOORE, Contestees	:	within Township 28 South, Range 18 East, Salt Lake Meridian, San Juan County, Utah.

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UNITED STATES of AMERICA, Contestant	:	UTAH 10666
	:	Involving the validity of the
v.	:	lode mining claim designated on
	:	Attachment "A" and situated
AIRBORNE PROSPECTORS, JAMES P. RIGG, JR., D. H. WEGNER, J. FRANK WRIGHT, J. P. RIGG, JR., ESTHER MOORE BROWN and MARY ELLEN MOORE, Contestees	:	within Township 27 South, Range 19 East, Salt Lake Meridian, San Juan County, Utah.

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UNITED STATES of AMERICA, Contestant	:	UTAH 10667
	:	Involving the validity of the
v.	:	lode mining claim designated on
	:	Attachment "A" and situated AIRBORNE PROSPECTORS,
	:	within Township 27 South, Range
JAMES P. RIGG, JR.,	:	19 East, Salt Lake Meridian,
J. FRANK WRIGHT, D. H. WEGNER,	:	San Juan County, Utah.
J. P. RIGG, WILLARD PEASE	:	
DRILLING COMPANY, W. DON QUIGLEY,	:	
ESTHER MOORE BROWN and	:	
MARY ELLEN MOORE,	:	
Contestees	:	

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PREFACE

Pursuant to 43 CFR § 4.451 (formerly 43 CFR § 1852.2) the Utah State Director, Bureau of Land Management, Department of the Interior, issued complaints on June 16, 1966 (in Utah 10421), on November 28, 1967 (in Utah 10615 through 10622, 10628 and 10630), and on January 22, 1970 (in Utah 10666 and 10667). The complaints challenged the validity of the lode mining claims designated on Attachment "A". The complaint in each contest alleged (1) that "the land embraced within the claims is nonmineral in character", and (2) that "minerals have not been found within the limits of the claims in sufficient quantities to constitute a valid discovery". Timely answers were filed denying the above allegations of the complaints. 1/

The contests were consolidated, and a hearing was held on December 17 and 18, 1969, on April 20 through 24, 1970, and on April 27 through 29, 1970, at Grand Junction, Colorado. The contestant was represented at the hearing by Mr. Harvey C. Sweitzer, Office of the Solicitor, Department of the Interior, Salt Lake City, Utah. All of the contestees, except H. W. Balsley and Robert H. Ruggeri, were represented by Mr. Gregory K. Hoskin of the law firm of Nelson, Hoskin, Groves & Prinster of Grand Junction, Colorado. No

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1/ Certain of the complaints listed parties in addition to those named above as contestees. Apparently these additional parties did not file timely answers to the complaints with the Utah Land Office as required by 43 CFR § 4.450-6 and § 4.451-2 (formerly 43 CFR § 1852.1-6 and § 1852.2-2).

appearance was made at the hearing in behalf of H. W. Balsley and Robert H. Ruggeri. Extensive post-hearing briefs have been submitted. 2/

THE ISSUES

The parties agreed that the following issues are involved in each of the 13 contests (Tr. 8, 9, 263):

(1) Whether the land embraced within each of the contested claims is mineral or nonmineral in character.

(2) Whether minerals have been found within the limits of each of the contested claims in sufficient quantities to constitute a valid discovery.

(3) Whether each of the contested claims is presently supported by a valid discovery.

(4) Whether the land within any of the contested claims has been withdrawn from the operation of the mining laws, and if so, the legal effect, if any, of such withdrawal.

(5) Whether, if mineralization has not been found on any one of the contested claims, such a claim is valid by reason of the mining customs and practices of the area.

I see no reason to consider the question of whether the land within any of the contested claims is mineral or nonmineral in character. If the mining claims are not supported by a valid discovery, as required by the mining laws, the claims are invalid, and it would be immaterial whether the lands are mineral or nonmineral in character. If the claims are supported by a sufficient discovery, it would necessarily follow that the lands would be mineral in character. 3/

2/ The parties agreed to, and requested, several extensions of time for the filing of briefs. The final brief was submitted on March 24, 1972.

3/ In any event it appears that the criteria for determining whether land is mineral in character and subject to acquisition under the mining laws is, with one exception, the same as the criteria for determining whether a mining claim is supported by a valid discovery of a valuable mineral deposit. The exception is, that a valuable mineral deposit must be found to have a valid

(continued on next page)

In view of the third issue, I do not believe that it is necessary to consider the second issue set forth above. Even if minerals were found in sufficient quantities to constitute a proper discovery at some time in the past, a mining claim could not be recognized as valid at the present time unless it is presently supported by a sufficient discovery. The current conditions must satisfy the requirements of the mining laws. The loss of the discovery, either through exhaustion of the minerals, changes in economic conditions, or other circumstances, results in the loss of the location. See Gwillim v. Donnellan, 115 U.S. 45 (1885); Best v. Humboldt Placer Mining Company, 371 U.S. 334 (1963); Mulkern v. Hammitt, 326 F.2d 896 (9th Cir., 1964); United States v. Lem A. & Elizabeth D. Houston, 66 I.D. 161 (1959); United States v. R. W. Wingfield, A-30642 (February 17, 1967); United States v. A. P. Jones, 2 IBLA 140 (1971); United States v. Gunsight Mining Company, 5 IBLA 62 (1972).

THE LAW

Before considering the evidence, it would seem worthwhile to set forth certain principles of law that are applicable to this proceeding.

In order for a mining claim to be valid, there must be a discovery of a valuable mineral deposit (as distinguished from a mere finding of some mineralization) within the limits of the claim.

In United States v. Coleman, 390 U.S. 599 (1968), the court noted:

> The cornerstone of federal legislation dealing with mineral lands is the Act of May 10, 1872, 17 Stat. 91, 30 U.S.C. § 22, which provides in § 1 that citizens may enter and explore the public domain and, if they find "valuable mineral deposits," may obtain title to the land on which such deposits are located . . . (p. 600)

In East Tintic Consolidated Mining Company, 40 L.D. 271 (1911), the Department stated:

> . . . The exposure, however, of substantially worthless deposits on the surface of a claim; the finding of mere

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(continuation of footnote 3) discovery, whereas, at least in certain instances, a valuable mineral deposit can be inferred to show that land is mineral in character. See Davis v. Wiebbold, 139 U.S. 507 (1891); Diamond Coal and Coke Company v. United States, 233 U.S. 236 (1914); United States v. Clare Williamson, 75 I.D. 338 (1968).

surface indications of mineral within its limits; the discovery of valuable mineral deposits outside the claim; or deductions from established geological facts relating to it; one or all of which matters may reasonably give rise to a hope or belief, however strong it may be, that a valuable mineral deposit exists within the claim, will neither suffice as a discovery thereon, nor be entitled to be accepted as the equivalent thereof . . . (p. 273)

The East Tintic case, together with other similar Departmental decisions, was cited with approval by the court in Henault Mining Company v. Tysk, 419 F.2d 766 (9th Cir., 1969), cert. den., 398 U.S. 950 (1970), in support of the proposition that:

. . . A reasonable prediction that valuable minerals exist at depth will not suffice as a "discovery" where the existence of these minerals has not been physically established. (p. 768) 4/

A valuable mineral deposit is an occurrence of mineralization of such quality and quantity as to warrant a person of ordinary prudence in the expenditure of his time and money for the development of a mine and the extraction of the mineral. The mineral deposit that has been found must have a present value for mining purposes.

In Chrisman v. Miller, 197 U.S. 313 (1905), the court quoted with approval:

. . . the mere indication or presence of gold or silver is not sufficient . . . The mineral must exist in such quantities as to justify expenditure of money for the development of the mine and the extraction of the mineral . . . (p. 322)

In United States v. Coleman, supra, the court stated:

. . . The Secretary of the Interior held that to qualify as "valuable mineral deposits" under 30 U.S.C. § 22 it must be shown that the mineral can be "extracted,

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4/ Other cases that support the principle that there must be an actual physical finding of a valuable mineral deposit within the limits of a mining claim are: Chrisman v. Miller, 197 U.S. 313 (1905); Oregon Basin Oil and Gas Company, 50 L.D. 253 (1924), aff'd, 6 F.2d 676 (D.C. Cir., 1925), aff'd, 273 U.S. 660 (1927); United States v. C. F. Snyder et al., 72 I.D. 223 (1965), aff'd., 405 F.2d 1179 (10th Cir., 1968), cert. den., 396 U.S. 819 (1969); United States v. Joseph A. Schelden et al., A-29078 (April 26, 1963).

removed and marketed at a profit" – the so-called "marketability test." (p. 600)

* * *

. . . the marketability test is an admirable effort to identify with greater precision and objectivity the factors relevant to a determination that a mineral deposit is "valuable." It is a logical complement to the "prudent-man test" which the Secretary has been using to interpret the mining laws since 1894 . . . (p. 602) 5/

. . . Under the mining laws Congress has made public lands available to people for the purpose of mining valuable mineral deposits and not for other purposes. The obvious intent was to reward and encourage the discovery of minerals that are valuable in an economic sense. Minerals which no prudent man will extract because there is no demand for them at a price higher than the cost of extraction and transportation are hardly economically valuable. Thus, profitability is an important consideration in applying the prudent-man test, and the marketability test which the Secretary has used here merely recognizes this fact. (p. 602) 6/

5/ The Departmental decision in Castle v. Womble, 19 L.D. 455 (1894), announced the "prudent-man" test as follows:

> . . . where minerals have been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of his labor and means with a reasonable prospect of success, in developing a valuable mine, the requirements of the statute have been met. (p. 457)

6/ The Coleman case and the marketability test have been followed in (1) Converse v. Udall, 399 F.2d 616 (9th Cir., 1968), cert. den., 393 U.S. 1025 (1969), where the mining claims allegedly contained valuable mineral deposits yielding gold, silver, lead, zinc and copper, (2) White v. Udall, 404 F.2d 334 (9th Cir., 1968), where the mining claims had been located for gold, platinum and other minerals, (3) Udall v. Snyder, 405 F.2d 1179 (10th Cir., 1968), cert. den., 396 U.S. 819 (1969), where there was an alleged discovery of uranium and vanadium, and (4) Udall v. Garula, 405 F.2d 1181 (10th Cir., 1968), where there was an alleged discovery of a valuable deposit of gold.

An occurrence of mineral that simply warrants the further expenditure of labor and means in prospecting or exploration in an effort to ascertain whether the mineralization that has been found is sufficient (or whether other mineralization might be found that might be sufficient) to justify the actual working of the property does not constitute a valuable mineral deposit within the purview of the mining laws. The test is whether the facts warrant the development of the property, and not whether the facts warrant prospecting or exploration in an attempt to ascertain whether the property might warrant development. In other words, the standard is whether the evidence shows that a valuable mineral deposit has, in fact, been discovered, and not whether there is sufficient evidence that a valuable mineral deposit might exist to warrant further exploration for it.

In Chrisman v. Miller, supra, some oil had been found seeping at the surface within the limits of an oil placer mining claim. The court stated with respect to this finding of mineralization:

> It does not establish a discovery. It only suggests a possibility of mineral of sufficient amount and value to justify further exploration. (p. 320)

In Converse v. Udall, 262 F. Supp. 583 (D. Ore., 1966), 399 F.2d 616 (9th Cir., 1968), cert. den., 393 U.S. 1025 (1969), the courts affirmed the action of the Department of the Interior in drawing a sharp distinction between "exploration" for and "discovery" of a valuable mineral deposit. Both courts recognized, as stated by the District Court, that:

> . . . if one has found only enough mineral to justify further "exploration," as yet he has not made a "discovery," but if he has found enough mineral to justify a "development," then a "discovery" has been made. (p. 595)

In Henault Mining Company v. Tysk, supra, the court, in affirming a finding by the Department of the Interior that certain gold claims had not been perfected by valid discoveries, stated:

> No prudent man would proceed to the development of a mine on the surface showings we have here. He would drill to ascertain whether values exist at depth . . .
>
> The further exploration by drilling as recommended by Henault's expert is not then in the nature of development of a discovered lode. It is a search for values not yet discovered, the discovery of which would justify development.

Henault's "prudent man," then, is not a prudent mine developer but a prudent prospector. (p. 769) 7/

The prudent-man standard is a test based upon present economic facts and not on the probabilities of the future. The test is not whether a prudent man at some time in the future under more favorable circumstances might expect to develop a profitable mine, but whether under existing circumstances a profitable mine might be expected to be developed.

In Barrows v. Hickel, 447 F.2d 80 (9th Cir., 1971), the court ruled as follows:

> Nor can we accept appellant's argument that the "prudent-man test" should be deemed satisfied if an increased market and the depletion of better quality reserves are reasonably to be anticipated. The "marketability test" requires claimed materials to possess value as of the time of their discovery. Locations based on speculation that there may at some future date be a market for the discovered material cannot be sustained. What is required is that there be, at the time of discovery, a market for the discovered material that is sufficiently profitable to attract the efforts of a person of ordinary prudence. (p. 83)

The test for determining whether a valuable mineral deposit has been found is not whether the particular mining claimant feels justified in the further expenditure of labor and means, but whether a person of ordinary prudence would, under the circumstances, be justified in undertaking the development of a mine. The test is objective and not subjective. See Chrisman v. Miller, supra, and United States v. E. A. Barrows et al., 76 I.D. 299 (1969), aff'd., 447 F.2d 80 (9th Cir., 1971). The test is whether a person of ordinary prudence would invest his labor and means in the particular property after a full consideration of the available alternatives, including the labor and investment markets. While technically

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7/ Other cases that support the principle that a distinction must be drawn between facts which warrant exploration and facts which justify development are: United States v. Vernon O. and Ina C. White, 72 I.D. 522 (1965), aff'd., 404 F.2d 334 (9th Cir., 1968); United States v. C. F. Pruess, Sr., A-28641 (August 22, 1961), aff'd., 286 F. Supp. 138 (D. Ore., 1968), aff'd., 410 F.2d 750 (9th Cir., 1969), cert. den., 396 U.S. 967 (1969); United States v. New Mexico Mines, Inc., 3 IBLA 101 (1971).

a mining claim might be profitable if it shows a gross return of one dollar per day, this would not satisfy the test if a prudent man would not invest his time and money to develop a deposit for such a meager return. See United States v. Frank Melluzzo et al., 76 I.D. 181 (1969); United States v. E. A. Barrows et al., supra; Barrows v. Hickel, supra.

When the Government contests the validity of a mining claim, it bears only the burden of going forward with sufficient evidence to establish a prima facie case, and the burden then shifts to the mining claimant to show by a preponderance of the evidence that the claim is valid. See Foster v. Seaton, 271 F.2d 836 (D.C. Cir., 1959); United States v. New Jersey Zinc Company, 74 I.D. 191 (1967); United States v. Wayne Winters d/b/a Piedras del Sol Mining Company, 78 I.D. 193 (1971); United States v. Howard S. McKenzie, 4 IBLA 97 (1971).

A Government mineral examiner is under no obligation to make an exhaustive search of the land and test of the minerals as would normally be done by a prospector. His function is one of verifying the claimed discovery of a valuable mineral deposit. See United States v. Lawrence W. Stevens et al., 76 I.D. 56 (1969); United States v. Wayne Winters d/b/a Piedras del Sol Mining Company, supra; United States v. Jimmie (Juanita) P. Laing, 3 IBLA 108 (1971).

THE WITHDRAWAL

With the exception of a portion of the lands within eight of the mining claims, all of the lands within the contested claims lie within the Canyonlands National Park (Tr. 32, 673, 674). 8/ The park was established subsequent to the location of the claims by an act of September 12, 1964, 78 Stat. 939, 16 U.S.C. 271. As of that date, the lands within the park were no longer subject to mining location. The act withdrew the lands from the operation of the mining laws subject only to valid existing rights on the date of the act. See 43 CFR § 3811.2-2; Oklahoma v. Texas, 258 U.S. 574 (1922); American Law of Mining, Vol. 1, Section 2.52.

Where land is closed to acquisition under the mining laws subsequent to the location of a mining claim, the validity of the claim cannot be recognized unless the claim was supported by a valid discovery at the time of the withdrawal. See Cameron v. United States, 252 U.S. 450 (1919); United States

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8/ The eight claims that extend beyond the limits of the park are the Cerebellum, Ceria, Cesspit, Cereus, Certes, Certify, Ceres and Cesium. The five claims listed last cover the same identical ground (Ex. 16). Accordingly, four separate parcels of land extend beyond the park.

v. C. F. Snyder et al., 72 I.D. 223 (1965), aff'd., 405 F.2d 1179 (10th Cir., 1968), cert. den., 396 U.S. 819 (1969); United States v. Warren E. Wurts et al., 76 I.D. 6 (1969); United States v. A. P. Jones, 2 IBLA 140 (1971). In addition, even though there may have been a proper discovery at the time of a withdrawal, a mining claim cannot be considered valid unless the claim is presently supported by a sufficient discovery. See Best v. Humboldt Placer Mining Company, supra; United States v. A. P. Jones, supra; United States v. A. Speckert, 75 I.D. 367 (1968).

With the exception of the four parcels of land that extend beyond the park, each of the contested claims in order to be considered valid at this time must have been supported by a proper discovery of a valuable mineral deposit at the time of the withdrawal of the lands for the Canyonlands National Park and, in addition, each claim must presently be supported by a valid discovery.

GENERAL BACKGROUND

The mining claims were originally located in the early 1950's. Between the time of their location and 1963, amended location certificates and/or relocation certificates were filed for certain of the claims. Some of the claims are included in more than one contest. For example, Utah 10620 challenges the Cactus claim, Utah 10621 covers the amended Cactus, and Utah 10617 attacks the relocated Cactus. The parties agreed and the case was presented with the understanding that a reference to a claim by name would include the original location and any amended or relocations carrying the same claim name (Tr. 8, 9, 10, 409). The parties also agreed that the location of the claims on the ground, irrespective of whether they are identified in the contest complaints as an original location, an amended location or a relocation, are accurately shown on Exhibit 25 (Tr. 661, 1141, 1142). Exhibit 25 identifies each claim by name without reference to the type of location.

All of the claims, except one, are situated some 40 road miles southwest of Moab, Utah. These claims lie somewhat like a patchwork quilt pattern in a canyon area formed by the Colorado River near Dead Horse Point State Park. One claim is located several miles further southwest in canyon country created by the Green River.

The claims are allegedly valuable for uranium, vanadium, copper and molybdenum. The evidence at the hearing, however, was directed almost exclusively to uranium values. There are fairly extensive workings on some of the claims and there has been some production and sale of uranium-bearing material from certain of the claims.

THE GEOLOGY

The uranium deposits in the area of the claims occur in scours or channels at the top of the Moenkopi formation. The channels were eroded by streams

and subsequently filled with sandstone, mud, shale and carbon trash. The deposits of uranium are normally found where there were backwashes, bends or other features that contributed to slow or still water in the rivers or creeks. The uranium is usually associated with carbonaceous material. The deposits of uranium are normally tabular and elongated. They range in size from a few pounds up to several thousand tons. The deposits may occur as clusters. A halo of low grade mineralization may surround a cluster of pods or lenses containing higher grade uranium. If a halo does exist, it may lead from one pod or deposit to another. The percentage of uranium in a pod or lens can vary drastically. The Mossback member of the Chinle formation, where it occurs in scours or channels in the Moenkopi formation, is considered as the host rock for uranium. The Chinle, Wingate, Kayenta and Navajo formations, in ascending order, lie above the Moenkopi formation. The Navajo formation covers the surface of a portion of the contested claims. The distance from the top of the Moenkopi formation to the surface of the claims in the Navajo formation is some 1300 to 1400 feet. (Tr. 39, 155-159, 475-476, 548, 675-676, 1174, 1246, 1498; Ex. B, p. 10-11).

THE RAINBOW CLAIM

This claim is located about 50 miles from the other contested claims (Tr. 185). It was originally located in 1951 or 1952 (Tr. 178). There has not been any production from this claim (Tr. 207). There are no workings on the claim other than a drift about 40 feet long, which was driven in 1955 or 1956 (Tr. 38, 208, 212). 9/ There are some drill holes on the claim; however, no evidence was presented as to what was found as a result of the drilling (Tr. 91).

Mr. Jarvis R. Klem, a geological engineer, 10/ and Mr. Ferdie D. Peterson,

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9/ The drift or tunnel was characterized by one of the contestees as an exploratory drift – "the purpose of it was to poke a hole in underneath and see what was there" (Tr. 203, 211).

10/ Mr. Klem has a Bachelor's Degree in geological engineering. After his graduation from the University of Arizona in 1955, he worked for about five years for various companies as an exploration engineer. During this time he was engaged primarily in mineral exploration and the evaluation and appraisal of mineral properties. He has been employed by the Bureau of Land Management since about 1960. A large part of his work with the Bureau has consisted of the examination and evaluation of unpatented mining claims in order to determine if the claims meet the requirements of the mining laws. He has not had any experience in private industry in the exploration for or mining of uranium. He has investigated and considered uranium claims in his work with the Bureau of Land Management. (Tr. 23-30).

a geologist, 11/ both of whom are employed as mining engineers by the Bureau of Land Management, examined the claim on five occasions during 1968 and 1969 (Tr. 40-44). During their examinations they took 10 samples for assaying. Two of the samples were joint samples that were taken with, and at locations selected by, representatives of the contestees (Tr. 51-54). The other eight samples were taken either to confirm and correlate readings from radiometric instruments or to show the limits and extent of mineralization found in other samples (Tr. 44, 50, 54).

Mr. Klem testified that none of the samples contained sufficient amounts of copper, vanadium or molybdenum to be of any possible interest insofar as these minerals are concerned (Tr. 70). Both Mr. Klem and Mr. Peterson testified that certain of the samples contained uranium mineralization of some interest; however, they concluded that the samples were not representative of the material that would be extracted in a mining operation, and that the samples represented only isolated and insignificant spots or pockets of uranium mineralization (Tr. 69, 73, 126, 138, 139). Both witnesses expressed the opinion that they did not find sufficient mineralization within the limits of the claim to justify a prudent man in the expenditure of his labor and means in an effort to develop a paying mine (Tr. 78, 141).

The contestees did not present any evidence (other than the assay results of the two joint samples which had previously been offered by the Bureau) that indicates in any way the quantity and quality of any minerals that might have been found within the limits of this claim.

11/ Mr. Peterson received a Bachelor's Degree in geology from the University of Utah in 1936. He has been employed as a mining engineer with the Bureau of Land Management for 14 years. A good portion of his work with the Bureau has been devoted to the examination and evaluation of unpatented mining claims. Prior to his employment with the Bureau, he worked for six years in private industry, and for six years with other Government agencies. His work during this 12-year period involved various phases of the mining industry. He has had no work experience with uranium other than in his employment with the Bureau in the investigation and examination of mining claims. (Tr. 131-133, 145-148).

Mr. Albert E. Dearth, a geologist, who is vice president of exploration for Atlas Minerals, a division of Atlas Corporation, 12/ testified in a deposition taken by the contestees:

> Q. One question regarding the Rainbow: You indicated you were upon the Rainbow Claim in 1964 on a couple of occasions. Do you remember what your opinion was of the Rainbow Claim at that time as to its containing a valuable mineral deposit or probable valuable mineral deposit?
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> A. My judgment was and is that there is a channel exposed on the outcrop near the rim. That with what small amount of information is available suggests that there is a channel there. There is some significant mineralization, and it has an opportunity of making an ore body. It is not very well explored, but it has some favorable possibilities. (Ex. B, p. 84, 85).

Mr. Carl W. Appelin, a mining engineer, who is Chief of the Ore Reserve Branch of the Atomic Energy Commission in Grand Junction, Colorado, 13/ was

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12/ Mr. Dearth has a Bachelor's and Master's Degree in geology. After finishing graduate school in 1955, he spent the summer prospecting in behalf of a mining company for uranium deposits in the Colorado Front Range. From November of 1955, until the summer of 1963, he held various positions as a geologist with Texas-Zinc Minerals Corporation. During this period his work was devoted exclusively to uranium exploration and production. Since the summer of 1963, he has occupied several positions as a geologist with Atlas Corporation. At least half of his time with Atlas Corporation has been devoted to uranium. As a result of his study and work experience, he is familiar with the geology and occurrence of uranium in the area of the contested claims. (Ex. B, p. 4-10).

13/ Mr. Appelin received a degree in mining engineering from the University of Arizona in 1950. He has been employed by the Atomic Energy Commission for the past five years. He was also employed by the Atomic Energy Commission for about three years, between 1951 and 1954. He has been closely associated with uranium, vanadium and associated minerals in his work with the Atomic Energy Commission. He has been employed by various private companies and worked for those companies in different phases of mining and exploration. (Tr. 219-223).

called as a witness by the contestees. The contestees asked Mr. Appelin to compute the uranium ore reserves on the claim, using the sample information and the assay results (shown on Exhibit R-4) relating to the two joint samples taken by the parties, and the eight samples taken by the Bureau's witnesses. He stated:

> . . . I wouldn't think that you can compute even ten tons out of what you have here . . . (Tr. 226).
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> * * *
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> Well, you could say you have some reserve here, but it would be quite insignificant, really . . . (Tr. 227).

With respect to the question of whether the claim is in the exploration or development stage, Mr. Appelin testified:

> HEARING EXAMINER: Well, let me give you a hypothetical question, then. Assuming the geology is extremely favorable insofar as uranium is concerned, now on that assumption and on the basis of the information shown on Exhibit R-4, if you were hired on a consulting basis, what would you recommend the client do with this property?
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> THE WITNESS: I would have to say you have to map this out, and then whatever the trend direction would show, then I would recommend a fence of holes back of it, and if this begins to show you some confirmation that your gouging or your channel -- whatever you want to call it -- shows that you have favorable evidence, then I would recommend some more drilling. But this is as far as I would go at the outset.
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> HEARING EXAMINER: At what stage would you recommend that the client spend some time and money in actually developing the property?
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> THE WITNESS: When he finds ore of sufficient quantity to go after it.
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> HEARING EXAMINER: And this would be after the drilling program?
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> THE WITNESS: That's right; you couldn't begin to set up otherwise. (Tr. 242, 243).

Mr. Tom H. W. Loomis, a geologist, who is employed by the Bureau of Land Management, 14/ testified for the Bureau, but not as a part of its case in chief. Mr. Loomis examined the adit or drift on the claim in March of 1970, in company with Mr. Klem and Mr. Peterson (Tr. 1032). His examination consisted of "radiometric testing and scanning of the face with the Russian head scanner, [and] the examining of sample cuts, maps and so forth that were furnished" to him (Tr. 1032). 15/ Mr. Loomis testified that:

> . . . based upon my observations there, based upon the sample data furnished me, the maps, my past education and experience, I feel that there are not sufficient uranium reserves uncovered on this property, evident on this property, to warrant a prudent man spending further of his time, moneys or energies with a reasonable expectation of developing a valuable mine. (Tr. 1034, 1035).

I believe that the Bureau of Land Management presented a sufficient prima facie case to establish that there has not as yet been a valid discovery, as required by the mining laws, within the limits of the Rainbow claim. The evidence presented by the contestees does not in my opinion rebut the

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14/ Mr. Loomis received a Bachelor's Degree in geology in 1950. He spent the following year in graduate study. He then worked for a year as a geologist with a mining company in Canada. From 1953 to 1963, he was employed by the Atomic Energy Commission in Grand Junction, Colorado. His work during a portion of this period consisted of "evaluating mining prospects, properties, in the field of uranium". He was later reassigned and was "responsible for geologic and mining engineering examinations on prospects, active and inactive mines, to determine the uranium reserves and the potentials". Since April of 1963, he has been employed in various capacities as a mining engineer and geologist with the Bureau of Land Management. He has had no experience with the specific geologic formations in the area of the claims, but he has worked with comparable uranium deposits in similar formations. (Tr. 1028-1031, 1068-1070; Ex. 41).

15/ A Russian head scanner is somewhat like a Geiger counter but more sophisticated. It is a refinement in taking radiometric readings. It can be used like a Geiger counter for scanning and checking for anomalous radiation and also as a means of taking a radiometric assay of the wall rock. Its primary purpose is to avoid the necessity of taking a channel sample. (Tr. 458, 879, 1049, 1054).

showing made by the Bureau's evidence. The contestees' evidence, at best, simply indicates that further exploration might possibly be warranted in an attempt to find valuable deposits of uranium within the limits of this claim.

THE PLATEAU, THE OUTCROP AND THE CHALK GROUPS OF CLAIMS

The 110 mining claims included within these three groups are listed on Attachment "B" (Exs. 13, 14, 15). 16/ There is no evidence that there has been any production from any of the claims in these three groups. With two or three minor exceptions, there are no workings or excavations on any of these claims. The surface of the claims is, for the most part, several hundred feet above the contact between the Moenkopi formation and the Mossback member of the Chinle formation where the mineralization of interest is found (Tr. 475, 476, 676, 943).

Mr. Klem testified that he examined the Plateau group of claims on at least seven occasions, between 1963 and 1969 (Tr. 633, 634), and that, with the exception of the Camel claim, he did not find "any exposed veins or lodes containing any mineralization" within any of the 46 claims in the Plateau group (Tr. 636-639). 17/ Mr. Klem expressed the opinion, based upon his education, experience and examinations of the claims, that minerals had not been found "in such quantity and of such quality on any of the Plateau claims as would warrant a prudent man in the expenditure of his labor and means in an effort to develop a paying mine" (Tr. 640).

With respect to the Outcrop group of claims, Mr. Klem testified that he spent approximately 10 days examining the claims on four occasions during

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16/ Attachment "B" lists 164 claims. However, it includes original locations, amended locations and relocations. Since the amended locations and/or relocations cover the same land as the original locations, there are only 110 separate mining claims within these three groups of claims.

17/ In this particular segment of his examination, the witness referred to each claim by name within the Plateau group, except the Camel claim. Apparently the Camel claim was inadvertently overlooked during this phase of the examination (cf. Tr. 639).

1968 and 1969; that he did not find any mineralization within the limits of 21 of the claims that would warrant the taking of a sample; 18/ that he participated in the taking of samples from the other 12 claims within this group; that the samples from five of the 12 claims revealed that there was no mineralization of any interest within the claims; 19/ and that samples from seven of the 12 claims gave some interesting results; however, the mineralization was of a very limited quantity and was confined to very small isolated pockets (Tr. 641-659). 20/ Mr. Klem again expressed the opinion that minerals had not been found "in such quantities and of such quality on any of these claims [within the Outcrop group] as would warrant a prudent man in the expenditure of his labor and means in an effort to develop a paying mine" (Tr. 660).

Mr. Klem testified that he examined the Chalk group of claims in February and in April of 1970; that he did not find any mineralization within the limits of 25 of the claims that would warrant the taking of samples; that samples were taken from the other six claims within this group; 21/ that only one of the samples from one of the six claims (the Cerotic) revealed any mineralization of any interest; that the mineralization of interest was extremely limited in quantity; and that in his opinion sufficient minerals had not been found within the limits of any of the claims to warrant a prudent man in the expenditure of labor and means in an effort to develop a paying mine (Tr. 661-671).

Mr. Peterson testified that he examined the claims with Mr. Klem; that they spent four days on the ground examining the Plateau group of claims, 10 days in examining the Outcrop group, and five days in the examination of the Chalk group; that in his opinion there is not "an exposed vein or lode of rock in place on any of the claims" within the Plateau group, the Outcrop group and the Chalk group; and that in his opinion a profitable

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18/ These claims are the Cateye, Cauldron, Cennet, Cerf, Cerkon, Certain, Chirp, Chump, Click, Colorado, Congius, Conglomerate, Crackpot, Crafton, Cramp, Croaker, Croppie, Crow, Crowpot, Crump, and Crypt.

19/ The five claims are the B-Carnation, Churn, Creak, Critter and Critter No. 2.
20/ The seven claims are the Cerfdom, Chill, Chum, Conglobe, Cricket, Croup and Cynthia.

21/ The six claims are the Cerotic, Cervical, Cesspit, Chalazia, Chalk and Current.

venture could not reasonably be expected to result from the mining of any of the claims within these three groups of claims (Tr. 1139-1144).

The contestees did not offer any evidence (other than the assay results of joint samples taken by the Bureau of Land Management engineers and representatives of the contestees which had previously been presented by the Bureau) that indicates in any way the quantity and quality of any minerals that might have been found within the limits of any of the 110 mining claims included in the Plateau, the Outcrop and the Chalk groups of claims. In fact, the contestees did not offer any evidence, in addition to that presented by the Bureau, that even indicates that any mineralization has actually been found by the contestees within the limits of any one of the 110 claims.

The contestees did offer the opinions of several witnesses to the effect that a reasonable prudent person would expend time and money on one of the claims (the Crow) with a reasonable expectation of developing a profitable mining operation (Tr. 1239, 1333, 1510; Ex. B, p. 51). All of the opinions were based, not on the fact that a valuable mineral deposit or even on the fact that mineralization had actually been found within the limits of the claim, but on the expectations that mineralization found on adjoining claims (that are not included within the Plateau, the Outcrop and the Chalk groups of claims) might extend into the Crow claim (Tr. 1240, 1334, 1510; Ex. B-1).

The contestees also presented some general evidence (that did not relate to any specific claim or group of claims) from which inferences might be drawn (1) that deposits of uranium might be found at some depth beneath the surface of an unspecified portion of the lands covered by the 110 claims, (2) that it would not be economically feasible to drill several hundred feet through the overburden in an effort to find the uranium deposits that might lie at depth, and (3) that a practical miner would simply extend the present workings on other claims (in a combination exploration and mining venture) in an effort to find and develop the uranium presumed to exist at depth beneath the surface of the land.

In the answer to the complaint in Utah 10421, the contestees alleged in part that:

> Our reasons for maintaining that these claims are valid is that when our drifts and mining are finished on the adjacent claims and have entered onto these claims in question it will be found that there is mineral within the limits of these claims in sufficient quantities to constitute a valid discovery. It has long been a practice in the State of Utah to back up mining claims with adjacent claims to protect the interest of the person staking the original claim on which a valid mineral discovery was

found. In instances where this practice was not done other people have staked claims adjacent to mining claims on which valid mineral discovery was found, and at the time the drifts on these original discoveries reached the claims which had been staked adjacent thereto, the minerals that were mined from these adjacent claims no longer belonged to the original discoverer but to those who had staked the adjacent claims.

Presumably the contestees take the same position with respect to all of the claims included in the Plateau, the Outcrop and the Chalk groups of claims.

I am of the opinion that the Bureau of Land Management presented sufficient evidence to establish a prima facie case that there has not as yet been a valid discovery within the limits of any one of the 110 mining claims within the Plateau, the Outcrop and the Chalk groups of claims. I do not believe that the contestees satisfied their burden of showing that there has been a discovery of a valuable mineral deposit within the limits of any one of the claims within the three groups of claims.

With respect to the fifth issue agreed upon by the parties, i.e., whether, if mineralization has not been found on any one of the contested claims, such a claim is valid by reason of the mining customs and practices of the area, the contestees did not present any readily recognizable evidence as to the mining customs and practices in the area other than the general evidence noted above from which certain inferences might be drawn. In any event it seems abundantly clear, from the principles of law set forth above, that a mining claim cannot be considered as valid in the absence of an actual finding of a valuable mineral deposit within the limits of the claim. Mining customs and practices cannot change the requirements of the mining laws.

THE BONANZA, THE COMSTOCK AND THE CRAP GROUPS OF CLAIMS

The 12 mining claims included within these three groups are listed on Attachment "C" (Exs. 10, 11, 12). The major portion of the evidence presented at the hearing related to these claims. For the most part, the evidence did not treat each claim separately, but covered the claims either as three groups or as one group of claims.

There are 12 separate workings on these claims. The workings are horizontal drifts or tunnels that were driven into small escarpments or cliffs along a canyon. The drifts or tunnels enter the cliff faces at or near the contact between the Moenkopi formation and the Mossback member of the Chinle formation. The workings range in size from drifts only a few feet into the outcrop

to tunnels that extend several hundred feet into the ground with accompanying stopes or rooms.

Production

The claims, as one group, produced 2,639 tons of uranium-bearing material between 1952 and the third quarter of 1957. The uranium content of the material, on a weighted average basis, was 0.18% uranium. During this period of time, four separate individuals, or companies, mined and shipped material from the claims. There was no production from the property during the period from 1958 through 1962. Between 1963 and the first quarter of 1965, the claims produced 1,831 tons of material, with a weighted average of 0.14% uranium. During this period of time, two separate operators mined and shipped material from the claims. There has not been any production from the property since 1965. (Tr. 1546, 1547; Exs. C, D, B-5, B, p.18).

The yearly production from the property and the uranium content of the material produced is as follows:

1952	29 tons	at 0.38%
1953	748 tons	at 0.19%
1954	1,206 tons	at 0.16%
1955	390 tons	at 0.17%
1956	161 tons	at 0.23%
1957	105 tons	at 0.14%
1963	1,132 tons)	at 0.14%
1964	533 tons)	
1965	166 tons	at 0.15%

The uranium content of the 4,470 tons of material produced and shipped during the nine years of operation, by six different operators, figures out to 0.16% uranium on a weighted average basis. I believe that this figure (or possibly the weighted average figures shown above for the production from 1952 to 1957, and from 1963 to 1965) is more significant than, for example, the 29 tons produced in 1952 with a uranium content of 0.38%. 22/

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22/ In addition to the 4,470 tons of material that were shipped to a mill between 1952 and 1965, an estimated 7,540 tons of material were mined and removed from certain of the workings on the claims. This material was presumably left in dumps near the entrances of the adits or tunnels and used to some extent in road construction work in the area of the claims. (Tr. 400, 503, 504, 553, 572, 596).

Selling Price

The contestees produced ore purchase contracts covering the property which were dated March 21, 1963, and February 24, 1965 (Exs. B-2, E). The 1965 contract originally had an expiration date of December 31, 1968. This contract was extended, with some modifications, to December 31, 1970 (Ex. B, p. 59).

The contracts provided for the following purchase prices per ton for ore containing the following percentages of uranium:

	1963 Contract	1965 Contract	Extended Contract
0.14%	$6.93	$7.84	$6.57
0.16%	9.89	10.24	8.58
0.18%	12.91	12.96	10.85

The contracts specified that no payment would be made for "any constituents of ore sold hereunder other than the U_3O_8 contained in such ore" (Exs. B, p. 18, B-2, E).

In addition to the purchase price per ton, the contracts provided for a haulage allowance from the property to the ore-buying station in the following amounts:

1963 contract – 6 cents per ton mile, but not to exceed $3.00 per ton if the weighted average grade is less than 0.25% U_3O_8.

1965 contract – Actual cost of transporting ore, but not to exceed $2.40 per ton.

Extended contract – Actual cost of transporting ore, but not to exceed $2.01 per ton.

Costs

No evidence, other than the following, was presented relating to the costs of mining the property, or the cost of transporting the material to the ore-buying station, during the period preceding the withdrawal of the land and the establishment of the Canyonlands National Park in September of 1964:

1. Mr. Loomis expressed the opinion that the costs of mining the property as of 1964 would approximate $25 per ton of material. He arrived at this figure by adjusting his present-day costs of mining to reflect the inflationary cycle since 1964. (Tr. 1043, 1044, 1098, 1104).

2. An ore reserve data sheet prepared by the Atomic Energy Commission in 1964, states that the estimated direct mining cost for the property is $10 per ton (Ex. D).

3. A Bulletin issued in 1965 by the United States Bureau of Mines states, with respect to uranium, that:

> Operating costs in underground mines, including direct and indirect mining costs, exploration, development, and amortization, have ranged from about $11 to nearly $20 per ton of ore mined in the larger developments. In the smaller mines direct and indirect mining costs and exploration drilling ranged from about $12 per ton of ore to as high as $45 . . . (Ex. R-7).

On the basis of the above cost figures, one can only conclude (1) that the property was operated at a loss between 1963 and 1965 when two separate operators produced and shipped 1,831 tons with a weighted average of 0.14% uranium, (2) that the property could not have been operated at a profit at the time of the withdrawal in 1964 if the average grade of all of the material produced, i.e., 4,470 tons at 0.16% uranium, was representative of the material found within the claims, and (3) that if Mr. Loomis' estimate is ignored, the property might possibly have been operated at a marginal profit at the time of the withdrawal if the average grade of the material produced between 1952 and 1957, i.e., 2,639 tons at 0.18% uranium, was representative of the material found within the claims.

The evidence that was presented relating to the costs of mining the property and the cost of transporting the material to the ore-buying station as of the time of the hearing is as follows:

1. Mr. Loomis assumed an operation, based upon the past history of production from the claims, of 100 tons per month. He estimated on the basis of detailed figures that the mining costs would be on the order of $32 per ton. This figure did not include overhead or exploration costs. (Tr. 1036-1038, 1041-1043, 1095-1097). He did not express an opinion on transportation costs.

2. Mr. Peterson expressed the opinion that it would cost $33.60 per ton to mine the property in an assumed operation producing 100 tons per month (Tr. 1144, 1145). He did not express an opinion on transportation costs.

3. Mr. Klem testified that on the basis of a 150-ton-per-month operation it would cost at least $24 per ton just for heavy equipment and labor. This figure did not include miscellaneous tools, equipment and supplies, or any exploration costs. (Tr. 973-975, 999-1009). He estimated that the haulage or transportation costs to the mill would run from $5 to $7 per ton (Tr. 977, 1009, 1010).

4. Donald K. Andrews, a uranium mine operator, 23/ who appeared as a witness for the mining claimants, testified that he had computed the costs of mining the contested claims (Tr. 1323); and that on a production basis of 500 tons of ore per month, the property could be mined for $15.40 per ton (Tr. 1351-1360). Mr. Andrews presented detailed cost figures. The figures did not, however, include any items for capital investment or for the time and effort that might be spent by the operator in the mining operation (Tr. 1354, 1360). Mr. Andrews estimated that the haulage costs would run between $4 and $6 per ton (Tr. 1327).

5. Calvin Black, a uranium mine operator, 24/ who also appeared as a witness for the contestees, testified that he mined 6,000 tons of uranium ore in 1969 at a cost of $10.07 per ton (Tr. 1502-1504); that his haulage costs were $5.60 per ton (Tr. 1503); and that it would cost less (by some undisclosed amounts) to mine and transport ore from the contested claims (Tr. 1499, 1500). Mr. Black's cost figures did not include any item representing the cost of his capital investment (on which he was taking depreciation of $10,000 per year) or any item representing the time and effort that he personally contributed to the mining

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23/ Mr. Andrews considers himself a practical miner. He has been a mine operator for the past 21 years. Practically all of his mining work has been in connection with uranium. He does not have any formal education in mining or geology. (Tr. 1309, 1310).

24/ Mr. Black characterizes himself as a practical miner. He has been engaged in mining since 1948. Apparently all of his mining work has been in connection with uranium. He does not have any formal education in mining or geology. (Tr. 1494, 1495).

operation (Tr. 1520, 1528). It should be noted that Mr. Black also testified that if he ships material containing something above 0.20% uranium, he can make a profit (Tr. 1521).

On the basis of the above cost figures and the ore purchase contract in existence at the time of the hearing, I can only conclude that the property could not have been operated at a profit at the time of the hearing even if the average grade of the material produced between 1952 and 1957, i.e., 0.18%, is representative of the material found within the claims. If the average grade of all of the material that has been produced from the claims, i.e., 0.16%, is representative of the material found within the claims, then anyone that might have operated the property at the time of the hearing would have sustained an even greater loss.

Reserves

During November and December of 1963, Atlas Corporation, as part of an assistance program for small shippers, drilled 29 holes on the claims. The drilling was done in the areas of three workings on land where the Crap and Crouch claims overlap, on land where the Curtis and Count claims overlap, and on land where the Cuthbert and Comstock claims overlap. No drilling was done on the other six claims within these three groups of claims. The holes were drilled from the surface to depths ranging from 77 feet to 122 feet. The holes were probed with a gamma ray instrument in order to determine the thickness and the equivalent uranium content of any uranium mineralization encountered in the drilling. (Tr. 1200, 1606-1609; Exs. B, p. 20-21, B-1, B-3, B-4).

In January of 1964, representatives of the Atomic Energy Commission examined the property. On the basis of the Atlas Corporation drilling data, they calculated indicated and inferred ore reserves in four separate blocks or areas on the claims that had been drilled. 25/ They concluded that as of October 1, 1963, there were 1,180 tons (including the 11 tons noted below) of indicated reserves with a grade of 0.26% uranium, and 775 tons of inferred reserves with a grade of 0.20% uranium. They then added the fourth quarter production for 1963 and the mining operators estimate of the January 1964 production (all of which apparently came from places other

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25/ They also estimated that there were 11 tons of indicated ore with a grade of 0.22% uranium on one of the claims (the Crabapple) that had not been drilled.

than the areas of indicated and inferred reserves) and arrived at indicated reserves of 1,800 tons at 0.22% uranium, and inferred reserves of 775 tons at 0.20% uranium. (Ex. D). 26/

Following the ore reserve estimate, the workings on the claims were extended into at least portions of the four areas where the Atomic Energy Commission had delineated indicated and inferred reserves. The production and shipment of ore from the four reserve areas through the first quarter of 1965, the date of the last production from the claims, was considerably less than the estimated reserves.

At the time of the hearing, the Atomic Energy Commission estimated that there was an ore reserve balance of 1,710 tons with a grade of 0.21% uranium remaining within the claims. 27/ This estimate was arrived at by taking the original reserve estimates of October 1, 1963, and deducting subsequent production through the first part of 1965. (Tr. 1397-1410, 1474-1477, 1656-1680; Exs. C, D, 44, 45). One can either conclude that the mining operators, for some unknown reason, abandoned the property in the first part of 1965, and walked away from the remaining ore reserves delineated by the Atomic Energy Commission, or that subsequent work established that the ore reserve

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26/ The ore reserve data sheet prepared by the Atomic Energy Commission states in part:

> . . . the grade of the indicated reserves is higher than the past production grade, even after considerable dilution but until mining proves otherwise, the reserve grade is reduced to more nearly coincide with past production grade.
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> * * *
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> . . . chief problem [has been] the spotty occurrence of the ore.
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> * * *
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> The operation is marginal as the ore has been thin and low grade. If the new ore outlined by drilling is found by mining to be continuous, then the operators should derive a fair profit. (Ex. D).

27/ The purchase price per ton of material containing 0.21% uranium was $14.20 under the extended contract in existence at the time of the hearing (Ex.

estimates made by the Atomic Energy Commission as of October 1, 1963, were overly optimistic. 28/

Contestant's Witnesses

Mr. Klem testified that he examined the two claims within the Bonanza group on seven occasions between 1967 and 1970 (Tr. 385, 386, 394, 418); that the two workings on the claims and the outcrop were scanned with radiometric instruments (Tr. 407); that joint samples were taken with, and at places selected by, representatives of the contestees (Tr. 402); and that other samples were taken to delineate the extent of any mineralization of possible interest that was found (Tr. 387, 394; Ex. 18). He expressed the opinions that the mineralization found within the two claims was "very, very limited" (Tr. 395); that the best mineralization found was "very limited, a couple of small pockets" (Tr. 402); and that the quantity and quality of the mineralization are too limited to justify any mining operation (Tr. 408, 409).

With respect to the Comstock group of claims, Mr. Klem testified that he examined the seven claims on 12 occasions between 1967 and 1970 (Tr. 420-422); that he spent a total of approximately 25 days in the examination of the claims (Tr. 423); that the workings and the outcrop face were scanned with radiometric instruments (Tr. 424, 427, 556); that he participated in the taking of joint samples at places selected by the contestees (Tr. 482, 483, 543); and that additional samples were taken and radiometric instruments were used to determine the extent of the mineralization of interest that was found (Tr. 461, 463, 480-495, 510, 525, 527, 531, 532, 542-548, 570). Mr. Klem stated that a few spots or pockets of mineralization of interest were found, but "the limited size of the pockets and the scarcity of the mineralization coupled with the quantity and quality of them" would not justify the cost of mining (Tr. 505, 548, 549, 570-574).

Mr. Klem stated that he examined the three claims within the Crap group of claims on nine occasions between 1967 and 1970 (Tr. 578, 579); that he spent an estimated six and one-half days in his examination of these claims (Tr. 579); and that the workings and outcrop were scanned with radiometric instruments, joint samples were taken by the parties and areas of possible interest were checked with additional samples and radiometric instruments (Tr. 580, 583, 608). He expressed the opinions that the "mineralization

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28/ I cannot accept the contestees' theory that the claims were not worked after the first quarter of 1965 because of the contest proceedings initiated by the Bureau of Land Management. The complaints attacking the validity of these claims were not filed until November 28, 1967. In addition, three other separate operators had leases on the property after 1965. They apparently did exploratory work, but did not produce any uranium-bearing material (Ex. B, p. 18, 57, 58).

occurring on these claims is thin lenses, it occurs in a shale rock and is very limited in size" (Tr. 619); and that the mineralization is not of sufficient quantity or quality "that the extraction would justify the cost thereof" (Tr. 619, 620).

Mr. Klem also testified that the mineral occurrences on the three groups of claims "are extremely small, sparsely located, pockets of mineralization" (Tr. 680, 681); that if he was a private consultant, he would not recommend that a client locate any one of the claims (Tr. 933, 934); that in his opinion the three groups of claims have been mined out (Tr. 691); 29/ that "you could scab out a couple hundred tons" of ore grade material, and "I am using ore-grade material at .10 which the mills will buy" from the three groups, but it would not be economically feasible to do so (Tr. 852, 853, 995); that if a prudent person could find, in the face of any of the workings on the claims, uranium-bearing material over an area six feet wide by two feet high that assayed 0.20% uranium, he would go back and drop a few holes to ascertain the length or depth of the deposit, and this would be exploration (Tr. 929-932); and that you have to "have a pretty good idea what is there before you enter mining if you are prudent" -- you have "to see enough reserves on the property to justify the move-in costs and the mining expense and transportation and what not for moving onto a property" (Tr. 919).

Mr. Peterson examined the three groups of claims with Mr. Klem and partipated in the radiometric scanning and the taking of samples (Tr. 1138, 1140). He testified that he spent three days on the ground in the examination of the Bonanza group, 24 days in the investigation of the Comstock group, and five and a half days examining the Crap group (Tr. 1139); that the mineralization within the workings on the claims occurs in isolated pods, and it is erratic and not continuous (Tr. 1143, 1144, 1146); that while some of the samples, and in particular the joint samples, show significant uranium content, the samples are not representative of any significant tonnage and are indicative only of isolated hot spots (Tr. 1685, 1686); that a few tons of uranium ore could be extracted from the workings in a scabbing operation, but it would not be profitable to conduct such an operation (Tr. 1693); that in his opinion a profitable mining venture could not reasonably be expected to result from the further expenditure of labor and means on any one of the

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29/ I cannot reconcile this expression with a later statement that he believes that some of the claims in the Comstock group might have some potential (Tr. 704). Presumably he simply meant that any ore deposits that might have been found have been mined out, but certain unspecified claims might have some potential for the discovery of other ore deposits.

claims (Tr. 1144, 1145); and that "when you consider the grade of all the material that has been shipped and the material that must have been removed to ship what has been shipped, I wouldn't believe that a reasonably prudent miner would be justified in further work there" (Tr. 1163).

Mr. Loomis examined the principal workings on the three groups of claims on four days during March of 1970 (Tr. 1032, 1035). Mr. Klem and Mr. Peterson showed him what they had found in their examinations, and correlated the data on their maps with the workings on the claims (Tr. 1031, 1034). Mr. Loomis used a Russian head scanner to check various areas throughout the workings and to check other areas to establish the extent of the mineralization (Tr. 1034, 1051). He testified that:

> . . . based upon my observations there, based upon the sample data furnished me, the maps, my past education and experience, I feel that there are not sufficient uranium reserves uncovered on this property, evident on this property, to warrant a prudent man spending further of his time, moneys or energies with a reasonable expectation of developing a valuable mine. (Tr. 1034, 1035).

Mr. Loomis also expressed the opinion that the ore reserve blocks delineated by the Atomic Energy Commission (with the exception of the 11 tons on the Crabapple claim) had been entered and for all practical purposes mined out (Tr. 1656-1680). 30/

Contestees' Witnesses

Mr. Albert E. Dearth, who, as previously noted, is a geologist and vice president of exploration for Atlas Minerals, examined or visited the claims on at least six occasions between 1963 and 1966 (Ex. B, p. 13-15). He visited the claims as part of a program conducted by Atlas to assist small operators in order to improve the supply of ore to the Atlas mill at Moab, Utah (Ex. B, p. 16). After studying a map 31/ showing the mine workings,

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30/ With respect to the ore reserve indicated on the Crabapple claim by the Atomic Energy Commission, Mr. Peterson testified:

> "Well, I think the AEC was rather liberal in their calculations, but 11 ton is so insignificant that I wouldn't dispute it" (Tr. 1695).

31/ At the time of Mr. Dearth's deposition, the map was identified as Exhibit D-A. The map was received in evidence as Exhibit B-1.

the assay results of the joint samples taken by the parties 32/ and the results of the drilling done by Atlas, he testified:

A. On the basis of any number of occasions here, you can choose samples that show ore material. That could be blocked-out ore. It is an excellent opportunity to start mining.

Here is a sample that has 24 inches of .61 followed by another one that has 12 inches of .46. Outstanding, remarkable.

Here is one that has 24 inches of .51. That is blocked-out ore.

Here is another one that has 27 inches at .30. Fourteen inches of 1.25 percent. That is very infrequently that you see those types of samples cut in any mine. Some of our producing mines don't have that good.

Here is another one: 15 inches of .73. I would say that is an outstanding opportunity to start mining. (Ex. B, p. 42, 43).

* * *

Q. State when, if ever, you have seen mine workings that are idle with showings like we have on this D-A?

A. I have never seen a mine workings where you can walk in, cut samples of this thickness and grade. And I have been in a lot of mines. Normally, you just don't find it.

Q. Looking at that map which is D-A, can you point out specific areas, naming them by claim that they appear to be on, which look promising enough to mine - not to explore, but to mine?

32/ The joint samples were taken at places selected by the contestees. The points of sampling were selected on the basis of the best readings obtained from a Geiger counter by the contestees (Tr. 1554, 1555).

A. Well, I don't think you can find one that is not promising for mining. Each one has ore grade thickness and grade. (Ex. B, p. 44, 45).

* * *

Q. Based on the information shown on D-A, would Atlas, your employer, compute ore reserves on this property?

A. Yes.

Q. Would they be significant?

A. They would. (Ex. B, p. 47).

Mr. Dearth also testified that in his opinion the property can be profitably mined, and if it were selectively mined, it would be very profitable (Ex. B, p. 48); that he does not know whether the areas where uranium mineralization was found by the drilling have or have not been mined out (Ex. B, p. 68); that neither he nor Atlas have made any ore reserve estimates for the property (Ex. B, p. 68); that assuming that the material shown on the map is valid, and that the areas have not already been mined out, he would recommend the property to "a resourceful mining contractor whose capital expenditures would amount to a used compressor, a used truck and a used jackhammer" and "with those tools I think he can develop a profitable mine" (Ex. B, p. 74); that he has not, however, calculated costs and this would be essential before making such a recommendation (Ex. B, p. 75); however, from what he knows of mining costs of small miners, it would appear, without further calculation, that a small miner could mine with a reasonable expectation of a profit (Ex. B, p. 84).

Mr. Carl W. Appelin, who, as has been noted, is a mining engineer and Chief of the Ore Reserve Branch of the Atomic Energy Commission in Grand Junction, Colorado, expressed the following comments with respect to a map given to him by the contestees showing the results of the joint samples taken by the parties:

. . . there was a recent thing that came up where we were handed a map with a bunch of phony assays. (Tr. 1422).

* * *

. . . I then handed this map to Dave Grundy, who is the geological engineer in charge of this division for ore reserve computation, and asked him to do a general outline method of ore reserve on it, and Dave took one look at it, and he said, "Carl," he says, "This is phony." He says, "There couldn't possibly be 50 and 60 hundredths values in that mine when leasers have been working on it."

We know this from experience, that no leaser leaves bonanza material in their mine . . . (Tr. 1423).

* * *

. . . All I have is that the ground is not represented by the sampling, and any competent mining engineer or geologist . . . knows that you cannot go over and take the hot spot and represent that as an ore reserve base . . . (Tr. 1427).

* * *

Now, if at the time that the BLM and Airborne Prospectors went in there and they found a hot spot and they sampled the hot spot, we can't take any responsibility for looking at the ground as an ore reserve sample. If you want a plaything, yes, you can do that any place. (Tr. 1443).

Mr. Nathan E. Salo, a geologist, who is exploration manager for Western Nuclear, Inc., 33/ testified that he visited the claims about 30 times between 1963 and 1966 (Tr. 1193-1195); that he went underground in all of the workings on several occasions during the fall of 1963, again on two or three occasions in January of 1964, and in January of 1966 he visited the workings on the Crap-Crouch claims (Tr. 1198, 1199, 1248); and that the purpose of the visits was to evaluate the claims as a source of mill feed for the Atlas mill at Moab, Utah (Tr. 1195). After studying maps showing the workings on the claims, the assay results of the joint samples, the assay results of the additional samples taken by the Bureau witnesses, and the results of the drilling that was done under his supervision and direction while employed by Atlas Corporation, he pointed out several areas in the workings that, in his opinion, looked promising enough to mine at the present time (Tr. 1226-1234). He also stated that on the basis of the information shown on the maps his company would be able to compute ore

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33/ Mr. Salo received a Bachelor's Degree in geology from the University of Colorado in 1954. Following his graduation he worked for the Atomic Energy Commission in the evaluation of uranium deposits on the Colorado Plateau for approximately five years. From 1959 to 1966, he worked for Atlas Minerals and its predecessor corporation. A major portion of his work during this period was devoted to uranium-related activities. He has been employed by Western Nuclear, Inc., since 1966. His work experience has involved the geology in the area of the claims and similar geologic formations. (Tr. 1185-1190).

reserves on the property and the ore reserves would, in his opinion, be significant (Tr. 1236). On cross-examination, Mr. Salo testified:

Q. . . . In your opinion, wouldn't a prudent person, before he mined something, make an exploration so he could at least have an estimate of quantity of a given material there?

A. I would say he would make a cursory examination to determine amount of material.

Q. Have you made such an examination with respect to any of these areas you testified to to determine amount?

A. No.

Q. So when you said that you thought some of these areas were ready to mine, isn't it a fact what you really meant – you thought that a prudent person might spend some time and money in further exploration to see whether there was sufficient quantity of something there that he could mine? Isn't this a fact?

A. I would agree to that. (Tr. 1262, 1263).

* * *

Q. Is there any single one of the mining claims you told us about in this "C" group that you would recommend to any man or men that they go in and start mining without first making further exploration to determine what might be there?

A. I would recommend mining only for the purpose of exploration, but I wouldn't recommend mining as mining.

Q. Okay. Well, maybe you and I both were confused as to terms, so when you were saying mining, you meant employing techniques which are also used for mining but for the purpose only of exploring to see what might be there and to determine whether a mining venture would be justified; is that a fact?

A. Essentially, yes.

Q. When you say essentially, is there any exception to what I said, or do you mean yes.

A. All right, I will say yes. (Tr. 1273, 1274).

Mr. Salo testified further on cross-examination with respect to one of the areas that he felt was promising enough to mine at the present time:

Q. Well, what is the area of activity there; do you know?

A. I don't know; not without making an examination.

Q. And you haven't done that?

A. I haven't done that.

Q. It would take further exploration before you would have any idea of it?

A. That's right.

Q. And you would so advise anybody that asked you about mining it?

A. Yes.

Q. It could be just an isolated, very small hot spot there as far as you know, couldn't it?

A. I think without any examination I wouldn't know. (Tr. 1266).

Mr. Salo agreed that his answers to the above questions would be equally applicable to all of the other areas that he had designated as being suitable for mining at the present time (Tr. 1267-1269).

Mr. Donald K. Andrews, who, as previously noted, is a practical miner, testified that he spent one day in November of 1969 examining the workings on the claims (Tr. 1312); that he was accompanied by two of the contestees who guided him and provided him with maps, assay and drilling data (Tr. 1313); and that he used a radiometric counter and a short hole probe in his examination (Tr. 1313). Mr. Andrews' evaluation of the property is shown by the following portions of his testimony:

A. I would say that the exposures they have is better than average by far. Thicknesses may not compare in some instances. However, I think that a very limited amount of work has been done on the ground. I would say that it hasn't been explored adequately. (Tr. 1315).

* * *

Q. Now, the testimony is that most of the ore in there appears to be in a shale lens, knife edge to two foot, right? Is this what you saw?

A. Yes, that's true.

Q. Can that be mined when it is of those widths?

A. Certainly portions of it would be in an exploration program. You could take a certain amount of it as you explore. It would help with the exploration costs. (Tr. 1321).

* * *

A. . . . if I took it, it would be on an exploration basis with the ore that could be mined as an aid to the cost of exploration and development of the property. If it wasn't for the potential of the property and you had only the existing ore faces in the holes there, it might be what you would say marginal whether you would go in, but with the potential of the property, this is what I would look at more than I would the making a profit on it as it stands there now. However, I am not saying that you couldn't make a profit on what is there. It's quite possible. (Tr. 1330).

* * *

A. I would expect to recover a certain amount of these exploration costs from the start. Exactly what percentage, I wouldn't know, but within three months I would know whether it would pay to continue with this program or not. I will state it this way. (Tr. 1365).

Mr. Calvin Black, who, as has been noted, is a uranium mine operator, testified that in 1966 he spent "maybe an hour to two hours" walking through and looking at some of the workings on the claims (Tr. 1512, 1513); and that he does not remember which specific workings he went through but "I believe we pretty well went through them all, but I couldn't say which ones we did or which ones we didn't" (Tr. 1513, 1514). Mr. Black stated:

. . . I believe even under the present market and the comparabilities of this area that if I were looking for a place to mine, I could go in there and produce

ore and make a profit right now. I don't think it would be great, but I believe the way that channel is and the fact that it appears to be going under the -- the more overburden on the Shinarump, that there can be a good mine developed there. (Tr. 1510).

Conclusion

I accept the opinions and conclusions expressed by the witnesses for the Bureau. I have no reason to question their competency or qualifications. The examinations that they made of the claims were certainly thorough and comprehensive. The inactivity in recent years with respect to the claims, the past production history of the claims, the value of the material that has been produced, and the cost of production all tend to support the conclusions and opinions of the Bureau's witnesses.

I accept the comments of Mr. Appelin, which are supported by other evidence, as to the weight that should be placed on the joint samples taken by the parties, and for this reason, among others, I reject the opinions and conclusions of Mr. Dearth. I cannot accept Mr. Black's evaluation of the property because I do not believe that his examination was sufficient to properly assess the nature and extent of any valuable mineral deposits that might exist within the property. The testimony of Mr. Salo and Mr. Andrews, at best, simply indicates that the property might warrant the expenditure of time and money for exploration in an attempt to find valuable mineral deposits.

I believe that the Bureau of Land Management presented a sufficient prima facie case to establish that each of the claims within the Bonanza, the Comstock and the Crap groups of claims is not, at the present time, supported by a discovery of a valuable mineral deposit as required by the mining laws. The evidence presented by the contestees does not, in my opinion, rebut the showing made by the Bureau's evidence.

ORDER

Pursuant to the prayers of the complaints, all of the mining claims listed on Attachment "A" are declared null and void.

Robert W. Mesch
Hearing Examiner

APPEAL INFORMATION

The contestees have the right of appeal from this decision to the Board of Land Appeals. The appeal must be in strict compliance with the regulations in Title 43, Part 4. A notice of the appeal must be filed in this office within 30 days from receipt of this decision. (See enclosed information pertaining to appeals procedures.)

If an appeal is taken by the contestees, the adverse party to be notified is:

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ATTACHMENT "A"

The lode mining claims included in each contest are as follows:

Utah 10421

Claim Name	Recorded	Book	Page	Description
Carpet	3/14/63	353	448	T27S, R19E, sec. 27
Caviar	"	"	447	"
Celt	"	"	434	T27S, R19E, secs. 28, 33
Chapel	"	"	427	T27S, R19E, sec. 27, 34
Charcoal	"	"	433	"
Chariot	"	"	431	"
Chasam	"	"	424	"
Checker	"	"	423	"
Cherry	"	"	422	"
Chess	"	"	421	"
Chicory	"	"	420	"
Chille	"	"	419	"
Choppy	"	"	444	T27S, R19E, sec. 28
Cigar	"	"	443	T27S, R19E, secs. 27, 28
Cinch	"	"	442	T27S, R19E, sec. 27
Cindar	"	"	441	"
Clank	"	"	440	"
Cobra	"	"	446	"
Cobweb	"	"	445	"
Colleen	"	"	449	T27S, R19E, sec. 27, 28
Colony	"	"	450	"
Columbine	"	"	451	T27S, R19E, sec. 27
Copperhead	"	"	453	"
Coral	"	"	454	"
Cork	"	"	455	"
Corncob	"	"	452	"
Cornet	"	"	426	T27S, R19E, secs. 27, 28, 33, 34
Cylon	"	"	430	T27S, R19E, secs. 27, 28, 33

Utah 10615

Claim Name	Recorded	Book	Page	Description
Comstock	6/1/51	R-3	502	T27S, R19E, Sec. 34
Coulson	"	"	501	"
Count	"	"	502	"
Courtney	"	"	505	"
Crabapple	"	"	505	"
Crib	"	"	504	"
Critter	"	"	501	"
Curtis	"	"	502	"
Cuthbert	"	"	501	"

Utah 10616

Claim Name	Recorded	Book	Page	Description
Amended Cennet	4/21/53	23	293	T27S, R19E, Sec. 35
Amended Cerkon	"	"	295	"
Amended Certain	"	"	294	"
Amended Chill	"	"	279	"
Amended Chirp	"	"	300	"
Amended Click	"	"	303	"
Amended Comstock	"	"	283	T27S, R19E, Sec. 34
Amended Coulson	"	"	281	"
Amended Count	"	"	284	"
Amended Courtney	"	"	286	"
Amended Crabapple	"	"	287	"
Amended Crackpot	"	"	299	T27S, R19E, Sec. 35
Amended Crafton	"	"	301	"
Amended Cramp	"	"	297	"
Amended Crap	"	"	290	"
Amended Crib	"	"	288	T27S, R19E, Sec. 34
Amended Critter No. 2	"	"	280	"
Amended Croaker	"	"	296	T27S, R19E, Sec. 35
Amended Crouch	"	"	289	"
Amended Croup	"	"	298	"
Amended Crow	"	"	291	"
Amended Curtis	"	"	285	T27S, R19E, Sec. 34
Amended Cuthbert	"	"	282	"
Amended Cynthia	"	"	292	T27S, R19E, Sec. 35

Utah 10617

Claim Name	Recorded	Book	Page	Description
Cauldron	9/1/51	R-4	84	T27S, R19E, Sec. 35
Cennet	6/9/51	R-3	506	"
Cerf	"	"	505	T27S, R19E
Crow	6/1/51	"	504	T27S, R19E, Sec. 35
Crowpot	6/9/51	"	509	T27S, R19E
Crump	6/1/51	"	503	"
Crypt	6/9/51	"	509	"
Current	9/1/51	R-4	83	"
Cynthia	6/9/51	R-3	506	T27S, R19E, Sec. 35
Relocated Caby	3/14/63	353	436	T27S, R19E, Sec. 33
Relocated Cactus	"	"	432	"
Relocated Caddy	"	"	428	T27S, R19E, Sec. 34
Relocated Calaboose	"	"	437	"
Relocated Calico	"	"	429	"
Relocated Camel	"	"	425	"
Relocated Canary	"	"	464	"
Relocated Cane	"	"	435	"
Relocated Cannon	"	"	456	T27S, R19E, Sec. 33
Relocated Capon	"	"	463	T27S, R19E, Sec. 34
Relocated Carbon	"	"	458	T27S, R19E, Sec. 33
Relocated Cardinal	"	"	457	T27S, R19E, Sec. 34
Relocated Carnation	"	"	439	"
Relocated Casino	"	"	459	T27S, R19E, Sec. 33
Relocated Catbird	"	"	461	T27S, R19E, Sec. 34
Relocated Cavalier	"	"	462	"
Relocated Cavalry	"	"	460	"
Relocated Cavern	"	"	438	"
Amended Critter No. 2	4/21/53	23	280	"

Utah 10618

Claim Name	Recorded	Book	Page	Description
Cerfdom	6/9/51	R-3	506	T27S, R19E
Cerkon	"	"	507	T27S, R19E, Sec. 35
Certain	"	"	507	"
Chaney	"	R-4	83	T27S, R19E
Chill	"	R-3	511	T27S, R19E, Sec. 35
Chirp	"	"	511	T27S, R19E
Churn	"	"	512	"
Chump	"	"	512	"
Churn	"	"	512	"
Click	"	"	513	T27S, R19E, Sec. 35
Colorado	9/1/51	R-4	83	T27S, R19E, Sec. 36
Crackpot	6/9/51	R-3	510	T27S, R19E, Sec. 35
Crafton	"	"	507	"
Cramp	"	"	508	"
Crap	6/1/51	R-3	504	"
Creak	6/9/51	"	511	T27S, R19E
Cricket	"	"	510	"
Croaker	"	"	508	T27S, R19E, Sec. 35
Crop	6/1/51	"	503	T27S, R19E
Croppie	6/9/51	"	508	"
Crouch	6/1/51	"	503	T27S, R19E, Sec. 35
Croup	6/9/51	"	509	"

Utah 10619

Claim Name	Recorded	Book	Page	Description
B-Carnation	4/8/53	23	186	T27S, R19E, Sec. 34
Cateye	"	"	186	"
Congius	"	"	185	T27S, R19E, Sec. 36
Conglobe	"	"	184	"
Conglomerate	"	"	185	"

Utah 10620

Claim Name	Recorded	Book	Page	Description
Caby	2/4/53	19	163	T27S, R19E, Sec. 33
Cactus	"	"	162	"
Caddy	"	"	162	T27S, R19E, Sec. 34
Calaboose	"	"	161	"
Calico	"	"	161	"
Camel	"	"	160	"
Canary	"	"	160	"
Cane	"	"	159	"
Cannon	"	"	159	T27S, R19E, Sec. 33
Capon	"	"	158	T27S, R19E, Sec. 34
Carbon	"	"	158	T27S, R19E, Sec. 33
Cardinal	"	"	157	T27S, R19E, Sec. 34
Carnation	"	"	155	"
Casino	2/3/53	"	157	T27S, R19E, Sec. 33
Catbird	2/4/53	"	156	T27S, R19E, Sec. 34
Cavalier	"	"	156	"
Cavalry	"	"	155	"
Cavern	"	"	154	"

Utah 10621

Claim Name	Recorded	Book	Page	Description
Amended Caby	9/23/54	195	357	T27S, R19E, Sec. 33
Amended Cactus	"	"	358	"
Amended Caddy	"	"	359	T27S, R19E, Sec. 34
Amended Calaboose	"	"	360	"
Amended Calico	"	"	361	"
Amended Camel	"	"	362	"
Amended Canary	"	"	356	"
Amended Cane	"	"	357	"
Amended Cannon	"	"	355	T27S, R19E, Sec. 33
Amended Capon	"	"	356	T27S, R19E, Sec. 34
Amended Carbon	"	"	354	T27S, R19E, Sec. 33
Amended Cardinal	"	"	355	T27S, R19E, Sec. 34
Amended Carnation	"	"	351	"
Amended B-Carnation	11/12/54	227	420	"
Amended Casino	9/22/54	195	353	T27S, R19E, Sec. 33
Amended Catbird	9/23/54	"	353	T27S, R19E, Sec. 34
Amended Catbird	9/23/54	"	353	T27S, R19E, Sec. 34
Amended Cateye	11/12/54	227	421	"
Amended Cavalier	9/23/54	195	352	"
Amended Cavalry	"	"	352	"
Amended Cavern	"	"	351	"
Amended Congius	11/12/54	227	419	T27S, R19E, Sec. 36
Amended Conglobe	"	"	419	"
Amended Conglomerate	"	"	420	"

Utah 10622

Claim Name	Recorded	Book	Page	Description
Caeser	7/9/51	R-4	14	T27S, R19E
Cerate	"	"	17	"
Cereal	"	"	16	"
Cerebellam	"	"	17	"
Cerebrum	"	"	17	"
Ceres	"	"	18	"
Cereus	"	"	19	"
Ceria	"	"	18	"
Cero	"	"	16	"
Cerotic	"	"	15	"
Cerous	"	"	16	"
Certes	"	"	19	"
Certify	"	"	19	"
Cerumen	"	"	15	"
Ceruse	"	"	15	"
Cervical	"	"	13	"
Cervine	"	"	14	"
Cervix	"	"	13	"
Cesium	"	"	23	"
Cess	"	"	14	"
Cession	"	"	13	"
Cesspit	"	"	23	"
Chaff	"	"	12	"
Chagrin	"	"	18	"
Chain	"	"	12	"
Chalazia	"	"	11	"
Chaldron	"	"	12	"
Chalet	"	"	11	"
Chalk	"	"	11	"

Utah 10628

Claim Name	Recorded	Book	Page	Description
Rainbow	8/27/51	R-4	77	T28S, R18E, Secs. 24, 25

Utah 10630

Claim Name	Recorded	Book	Page	Description
Amended Rainbow	11/12/54	227	416	T28S, R18E, Secs. 24, 25

Utah 10666

Claim Name	Recorded	Book	Page	Description
Amended Bonanza	12/18/51	R-4	431	T27S, R19E, Sec. 34

Utah 10667

Claim Name	Recorded	Book	Page	Description
Bonanza	8/10/51	R-4	50	T27S, R19E, Sec. 34

ATTACHMENT "B"

The mining claims included within the Plateau Group are as follows:

Caby
Amended Caby
Relocated Caby
Caddy
Amended Caddy
Relocated Caddy
Cactus
Amended Cactus
Relocated Cactus
Calaboose
Amended Calaboose
Relocated Calaboose
Calico
Amended Calico
Relocated Calico
Camel
Amended Camel
Relocated Camel
Canary
Amended Canary
Relocated Canary
Cane
Amended Cane
Relocated Cane
Cannon
Amended Cannon
Relocated Cannon
Capon
Amended Capon
Relocated Capon
Carbon
Amended Carbon
Relocated Carbon
Cardinal
Amended Cardinal
Relocated Cardinal
Carnation
Amended Carnation
Relocated Carnation
Relocated Carpet
Casino
Amended Casino
Relocated Casino
Catbird
Amended Catbird
Relocated Carbird
Cavalier
Amended Cavalier
Relocated Cavalier
Cavalry
Amended Cavalry
Relocated Cavalry
Cavern
Amended Cavern
Relocated Cavern
Relocated Caviar
Relocated Celt
Relocated Chapel
Relocated Charcoal
Relocated Chariot
Relocated Chasam
Relocated Checker
Relocated Cherry
Relocated Chess
Relocated Chicory
Relocated Chille
Relocated Choppy
Relocated Cigar
Relocated Cinch
Relocated Cindar
Relocated Clank
Relocated Cobra
Relocated Cobweb
Relocated Colleen
Relocated Colony
Relocated Columbine
Relocated Copperhead
Relocated Coral
Relocated Cork
Relocated Corncob
Relocated Cornet
Relocated Cylon

The mining claims included within the Outcrop Group are as follows:

B-Carnation
Amended B-Carnation
Cateye
Amended Cateye
Cauldron
Cennet
Amended Cennet
Cerf
Cerfdom
Cerkon
Amended Cerkon
Certain
Amended Certain
Chill
Amended Chill
Chirp
Amended Chirp
Chum
Chump
Churn
Click
Amended Click
Colorado
Congius
Amended Congius
Conglobe
Amended Conglobe
Conglomerate
Amended Conglomerate
Crackpot
Amended Crackpot
Crafton
Amended Crafton
Cramp
Amended Cramp
Creak
Cricket
Critter
Amended Critter No. 2
Croaker
Amended Croaker
Croppie
Croup
Amended Croup
Crow
Amended Crow
Crowpot
Crump
Crypt
Cynthia
Amended Cynthia

The mining claims included within the Chalk Group are as follows:

Caesar
Cerate
Cereal
Cerebellum
Cerebrum
Ceres
Cereus
Ceri
Cero
Cerotic
Cerous
Certes
Certify
Cerumen
Ceruse
Cervical
Cervine
Cervix
Cesium
Cess
Cession
Cesspit
Chaff
Chagrin
Chain
Chalazia
Chaldron
Chalet
Chalk
Chaney
Current

ATTACHMENT "C"

The mining claims included within the Bonanza Group are as follows:
Bonanza
Amended Bonanza
Coulson
Amended Coulson

The mining claims included within the Comstock Group are as follows:
Comstock
Amended Comstock
Amended Count
Courtney
Amended Courtney
Crabapple
Amended Crabapple
Crib
Amended Crib
Curtis
Amended Curtis
Cuthbert
Amended Cuthbert

Count

The mining claims included within the Crap Group are as follows:

Crap
Amended Crap
Crop
Crouch
Amended Crouch